# APPENDIX E
# CRS EXPANSION CONFIGURATIONS

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# APPENDIX E
# CRS EXPANSION CONFIGURATIONS

The CRS is a local area network (LAN) based system. It uses the 10Base2 Ethernet cables to connect two main processors (MP) and an expandable set of front end processors (FEP) to support the concurrent operation of individual weather broadcast programs on up to 13 transmitter channels (Channel 1 to 13) and 2 monitor/playback channels (PB1 and PB2).

This writeup provides the hardware information to describe how to expand an existing CRS system within the design limit to support additional transmitter channels.

## E-1 CRS Configuration Categories

Based on the number of FEPs used in the CRS, the CRS configurations can be grouped into three major categories: **Typical**, **Large**, and **Maximum**. Each configuration has a fully redundant pair of MPs with associated operator workstations located in the operator's environment. Each configuration also has an expandable set of FEPs and audio switching assembly (ASA) located in the equipment room.

> **Typical** configuration comprises 1 active FEP and 1 backup FEP to support up to 4 independent transmitter channels and 1 monitor/playback channel.
>
> **Large** configuration comprises 2 active FEPs and 1 backup FEP to support up to 8 independent transmitter channels and 2 monitor/playback channels.
>
> **Maximum** configuration comprises 3 FEPs and 1 backup FEP to support up to 13 independent transmitter channels and 2 monitor/playback channels.

One FEP can support up to 5 DECtalk cards. The ASA can support up to 15 ASM cards which are controlled and monitored by the audio switching controller (ASC) and audio control panel (ACP). Each supported transmitter channel or monitor/playback channel requires a separate DECtalk card and a separate audio switching module (ASM). The DECtalk card resides in the FEP and is used to generate synthesized voice, alert tone, NWRSAME tone, transmitter transfer tone, and to play back digitized voice files. The ASM card resides in the ASA and is used to perform the audio buffering and switching functions for the transmitter audio output.

The required MPs, FEPs, DECtalk cards, and ASM cards associated with each configuration are summarized in the following subsections.

## E-1.1 Typical Configuration (1 to 4 channels)

### E-1.1.1 1-Channel System

**Required MPs, FEPs, DECtalks, ASC, and ASMs**

The **Typical 1-channel** system has two MPs (0MP and 5MP), two FEPs (1FEP and 4BKUP), four DECtalk cards, one ASC card, and three ASM cards:

| | | | |
|---|---|---|---|
| 0MP | main processor 1 | | |
| 5MP | main processor 2 | | |
| 1FEP | front end processor 1 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | Channel 1 | (slot 2) |
| | DECtalk 5 | PB1 | (slot 6) |
| 4BKUP | backup front end processor | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | backup Channel 1 | (slot 2) |
| | DECtalk 5 | backup PB1 | (slot 6) |
| ASA | audio switch assembly | | |
| ASC | audio switch controller | | |
| | ASM 1 | Channel 1 | (slot 1) |
| | ASM PB1 | monitor/playback Channel 1 | (slot PB1) |
| | ASM Spare | spare | (slot S) |

**DECtalk Card Configurations**

There is one I/O jumper to be set on each DECtalk card:

| | FEP Name | FEP Slot # | I/O Address Jumper |
|---|---|---|---|
| 1FEP DECtalk 1 (Channel 1) | 1FEP | 2 | 240 |
| 1FEP DECtalk 5 (mon/playback chan 1) | 1FEP | 6 | 380 |
| 4BKUP DECtalk 1 | 4BKUP | 2 | 240 |
| 4BKUP DECtalk 5 | 4BKUP | 6 | 380 |

### ASM Card Configurations

There are five jumpers to be set on each ASM card:

| | ASA Slot # | Silence Alarm Jumper "JP1" | ACP Channel Sel. Jumper "JP2" & "JP3" | BKUP Live/ Playback Cntrl Jumper "JP4" | FEP Select Jumper "JP5" |
|---|---|---|---|---|---|
| ASM 1 (Channel 1) | 1 | EN (Enable) | 1 | BUL2 | 1FEP |
| ASM PB1 (mon/playback chan 1) | PB1 | DIS (Disable) | PB1 | PB | 1FEP |

### ASC Card Configuration

On both the operational and spare ASC, set the backup channel configuration using the seven jumpers on JP1. Using all seven jumpers, move the jumpers to the side of the block listing the number of output channels for your site configuration, the center row of pins being common. Example: Using figure 1 as a reference, if your site configuration had 5, 6, 9, or 10 channels, each jumper would connect from the center row of pins to the top row of pins. If your site configuration had 1, 2, 3, 4, 7, 8, 11, 12, or 13 channels, each jumper would connect from the center row of pins to the bottom row of pins.

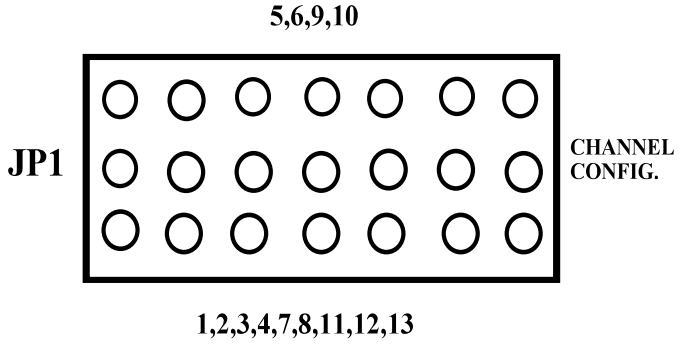


**Figure 1. ASM Card Jumper Block**

### Cable Label Between DECtalk Card and ASM Card

| From | To | Cable Label |
|---|---|---|
| 1FEP DECtalk 1 "J2" Port | ASM 1 "IN Port" | 1-1 |
| 1FEP DECtalk 5 "J2" Port | ASM PB1 "IN Port" | 1-5 |

**Cable Label Between DECtalk Card and ASC Card**

| From | To | Cable Label |
|---|---|---|
| 4BKUP DECtalk 1 “J2” Port | ASC “BKUP Audio 1” Port | 4-1 |
| 4BKUP DECtalk 5 “J2” Port | ASC “BKUP Audio 5” Port | 4-5 |

### E-1.1.2 2-Channel System

**Required MPs, FEPs, DECtalks, ASC, and ASMs**

The **Typical 2-channel** system has two MPs (0MP and 5MP), two FEPs (1FEP and 4BKUP), six DECtalk cards, one ASC card, and four ASM cards:

| | | | |
|---|---|---|---|
| 0MP | main processor 1 | | |
| 5MP | main processor 2 | | |
| 1FEP | front end processor 1 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 1 | (slot 2) |
| | DECtalk 2 | channel 2 | (slot 3) |
| | DECtalk 5 | PB1 | (slot 6) |
| 4BKUP | backup front end processor | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | backup channel 1 | (slot 2) |
| | DECtalk 2 | backup channel 2 | (slot 3) |
| | DECtalk 5 | backup PB1 | (slot 6) |
| ASA | audio switch assembly | | |
| ASC | audio switch controller | | |
| | ASM 1 | channel 1 | (slot 1) |
| | ASM 2 | channel 2 | (slot 2) |
| | ASM PB1 | monitor/playback channel 1 | (slot PB1) |
| | ASM Spare | spare | (slot S) |

**DECtalk Card Configurations**

There is one I/O jumper to be set on each DECtalk card:

| | FEP Name | FEP Slot # | I/O Address Jumper |
|---|---|---|---|
| 1FEP DECtalk 1 (Channel 1) | 1FEP | 2 | 240 |
| 1FEP DECtalk 2 (Channel 2) | 1FEP | 3 | 250 |
| 1FEP DECtalk 5 (mon/playback chan 1) | 1FEP | 6 | 380 |
| 4BKUP DECtalk 1 | 4BKUP | 2 | 240 |
| 4BKUP DECtalk 2 | 4BKUP | 3 | 250 |
| 4BKUP DECtalk 5 | 4BKUP | 6 | 380 |

**ASM Card Configurations**

There are five jumpers to be set on each ASM card:

| | ASA Slot # | Silence Alarm Jumper “JP1” | ACP Channel Sel. Jumper “JP2” & “JP3” | BKUP Live/ Playback Cntrl Jumper “JP4” | FEP Select Jumper “JP5” |
|---|---|---|---|---|---|
| ASM 1 (Channel 1) | 1 | EN (Enable) | 1 | BUL2 | 1FEP |
| ASM 2 (Channel 2) | 2 | EN (Enable) | 2 | BUL2 | 1FEP |
| ASM PB1 (mon/playback chan 1) | PB1 | DIS (Disable) | PB1 | PB | 1FEP |

### ASC Card Configuration

On both the operational and spare ASC, set the backup channel configuration using the seven jumpers on JP1. Using all seven jumpers, move the jumpers to the side of the block listing the number of output channels for your site configuration, the center row of pins being common. Example: Using figure 2 as a reference, if your site configuration had 5, 6, 9, or 10 channels, each jumper would connect from the center row of pins to the top row of pins. If your site configuration had 1, 2, 3, 4, 7, 8, 11, 12, or 13 channels, each jumper would connect from the center row of pins to the bottom row of pins.

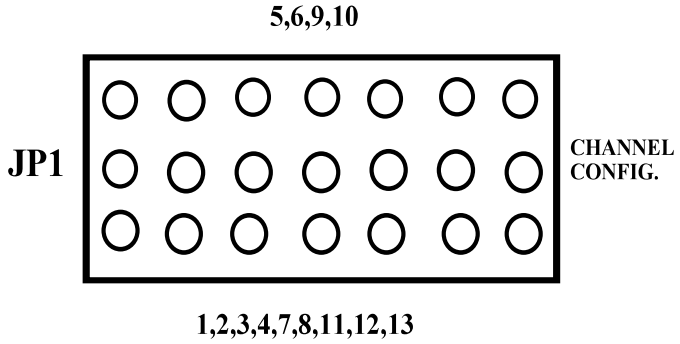


**Figure 2. ASM Card Jumper Block**

### Cable Label Between DECtalk Card and ASM Card

| From | To | Cable Label |
|---|---|---|
| 1FEP DECtalk 1 “J2” Port | ASM 1 “IN Port” | 1-1 |
| 1FEP DECtalk 2 “J2” Port | ASM 2 “IN Port” | 1-2 |
| 1FEP DECtalk 5 “J2” Port | ASM PB1 “IN Port” | 1-5 |

### Cable Label Between DECtalk Card and ASC Card

| From | To | Cable Label |
|---|---|---|
| 4BKUP DECtalk 1 “J2” Port | ASC “BKUP Audio 1” Port | 4-1 |
| 4BKUP DECtalk 2 “J2” Port | ASC “BKUP Audio 2” Port | 4-2 |
| 4BKUP DECtalk 5 “J2” Port | ASC “BKUP Audio 5” Port | 4-5 |

### E-1.1.3 3-Channel System

**Required MPs, FEPs, DECtalks, ASC, and ASMs**

The **Typical 3-channel** system has two MPs (0MP and 5MP), two FEPs (1FEP and 4BKUP), eight DECtalk cards, one ASC card, and five ASM cards:

| | | | |
|---|---|---|---|
| 0MP | main processor 1 | | |
| 5MP | main processor 2 | | |
| 1FEP | front end processor 1 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 1 | (slot 2) |
| | DECtalk 2 | channel 2 | (slot 3) |
| | DECtalk 3 | channel 3 | (slot 4) |
| | DECtalk 5 | PB1 | (slot 6) |
| 4BKUP | backup front end processor | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | backup channel 1 | (slot 2) |
| | DECtalk 2 | backup channel 2 | (slot 3) |
| | DECtalk 3 | backup channel 3 | (slot 4) |
| | DECtalk 5 | backup PB1 | (slot 6) |
| ASA | audio switch assembly | | |
| ASC | audio switch controller | | |
| | ASM 1 | channel 1 | (slot 1) |
| | ASM 2 | channel 2 | (slot 2) |
| | ASM 3 | channel 3 | (slot 3) |
| | ASM PB1 | monitor/playback channel 1 | (slot PB1) |
| | ASM Spare | spare | (slot S) |

**DECtalk Card Configurations**

There is one I/O jumper to be set on each DECtalk card:

| | FEP Name | FEP Slot # | I/O Address Jumper |
|---|---|---|---|
| 1FEP DECtalk 1 (Channel 1) | 1FEP | 2 | 240 |
| 1FEP DECtalk 2 (Channel 2) | 1FEP | 3 | 250 |
| 1FEP DECtalk 3 (Channel 3) | 1FEP | 4 | 328 |
| 1FEP DECtalk 5 (mon/playback chan 1) | 1FEP | 6 | 380 |
| 4BKUP DECtalk 1 | 4BKUP | 2 | 240 |
| 4BKUP DECtalk 2 | 4BKUP | 3 | 250 |
| 4BKUP DECtalk 3 | 4BKUP | 4 | 328 |
| 4BKUP DECtalk 5 | 4BKUP | 6 | 380 |

**ASM Card Configurations**

There are five jumpers to be set on each ASM card:

| | ASA Slot # | Silence Alarm Jumper “JP1” | ACP Channel Sel. Jumper “JP2” & “JP3” | BKUP Live/ Playback Cntrl Jumper “JP4” | FEP Select Jumper “JP5” |
|---|---|---|---|---|---|
| ASM 1 (Channel 1) | 1 | EN (Enable) | 1 | BUL2 | 1FEP |
| ASM 2 (Channel 2) | 2 | EN (Enable) | 2 | BUL2 | 1FEP |
| ASM 3 (Channel 3) | 3 | EN (Enable) | 3 | BUL2 | 1FEP |
| ASM PB1 (mon/playback chan 1) | PB1 | DIS (Disable) | PB1 | PB | 1FEP |

### ASC Card Configuration

On both the operational and spare ASC, set the backup channel configuration using the seven jumpers on JP1. Using all seven jumpers, move the jumpers to the side of the block listing the number of output channels for your site configuration, the center row of pins being common. Example: Using figure 3 as a reference, if your site configuration had 5, 6, 9, or 10 channels, each jumper would connect from the center row of pins to the top row of pins. If your site configuration had 1, 2, 3, 4, 7, 8, 11, 12, or 13 channels, each jumper would connect from the center row of pins to the bottom row of pins.

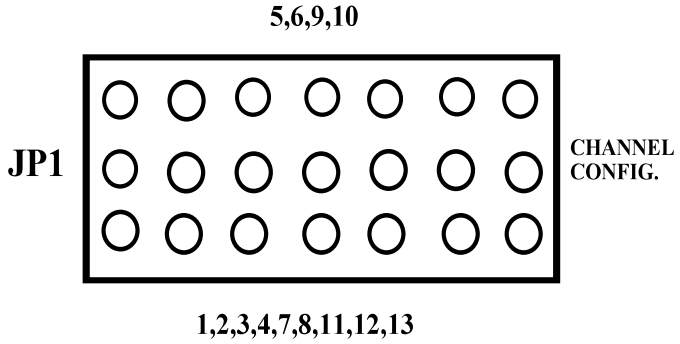


**Figure 3. ASM Card Jumper Block**

### Cable Label Between DECtalk Card and ASM Card

| From | To | Cable Label |
|---|---|---|
| 1FEP DECtalk 1 “J2” Port | ASM 1 “IN Port” | 1-1 |
| 1FEP DECtalk 2 “J2” Port | ASM 2 “IN Port” | 1-2 |
| 1FEP DECtalk 3 “J2” Port | ASM 3 “IN Port” | 1-3 |
| 1FEP DECtalk 5 “J2” Port | ASM PB1 “IN Port” | 1-5 |

### Cable Label Between DECtalk Card and ASC Card

| From | To | Cable Label |
|---|---|---|
| 4BKUP DECtalk 1 “J2” Port | ASC “BKUP Audio 1” Port | 4-1 |
| 4BKUP DECtalk 2 “J2” Port | ASC “BKUP Audio 2” Port | 4-2 |
| 4BKUP DECtalk 3 “J2” Port | ASC “BKUP Audio 3” Port | 4-3 |
| 4BKUP DECtalk 5 “J2” Port | ASC “BKUP Audio 5” Port | 4-5 |

### E-1.1.4 4-Channel System

**Required MPs, FEPs, DECtalks, ASC, and ASMs**

The **Typical 4-channel** system has two MPs (0MP and 5MP), two FEPs (1FEP and 4BKUP), ten DECtalk cards, one ASC card, and six ASM cards:

| | | | |
|---|---|---|---|
| 0MP | main processor 1 | | |
| 5MP | main processor 2 | | |
| 1FEP | front end processor 1 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 1 | (slot 2) |
| | DECtalk 2 | channel 2 | (slot 3) |
| | DECtalk 3 | channel 3 | (slot 4) |
| | DECtalk 4 | channel 4 | (slot 5) |
| | DECtalk 5 | PB1 | (slot 6) |
| 4BKUP | backup front end processor | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | backup channel 1 | (slot 2) |
| | DECtalk 2 | backup channel 2 | (slot 3) |
| | DECtalk 3 | backup channel 3 | (slot 4) |
| | DECtalk 4 | backup channel 4 | (slot 5) |
| | DECtalk 5 | backup PB1 | (slot 6) |
| ASA | audio switch assembly | | |
| ASC | audio switch controller | | |
| | ASM 1 | channel 1 | (slot 1) |
| | ASM 2 | channel 2 | (slot 2) |
| | ASM 3 | channel 3 | (slot 3) |
| | ASM 4 | channel 4 | (slot 4) |
| | ASM PB1 | monitor/playback channel 1 | (slot PB1) |
| | ASM Spare | spare | (slot S) |

**DECtalk Card Configurations**

There is one I/O jumper to be set on each DECtalk card:

| | FEP Name | FEP Slot # | I/O Address Jumper |
|---|---|---|---|
| 1FEP DECtalk 1 (Channel 1) | 1FEP | 2 | 240 |
| 1FEP DECtalk 2 (Channel 2) | 1FEP | 3 | 250 |
| 1FEP DECtalk 3 (Channel 3) | 1FEP | 4 | 328 |
| 1FEP DECtalk 4 (Channel 4) | 1FEP | 5 | 360 |
| 1FEP DECtalk 5 (mon/playback chan 1) | 1FEP | 6 | 380 |
| 4BKUP DECtalk 1 | 4BKUP | 2 | 240 |
| 4BKUP DECtalk 2 | 4BKUP | 3 | 250 |
| 4BKUP DECtalk 3 | 4BKUP | 4 | 328 |
| 4BKUP DECtalk 4 | 4BKUP | 5 | 360 |
| 4BKUP DECtalk 5 | 4BKUP | 6 | 380 |

**ASM Card Configurations**

There are five jumpers to be set on each ASM card:

| | ASA Slot # | Silence Alarm Jumper “JP1” | ACP Channel Sel. Jumper “JP2” & “JP3” | BKUP Live/ Playback Cntrl Jumper “JP4” | FEP Select Jumper “JP5” |
|---|---|---|---|---|---|
| ASM 1 (Channel 1) | 1 | EN (Enable) | 1 | BUL2 | 1FEP |
| ASM 2 (Channel 2) | 2 | EN (Enable) | 2 | BUL2 | 1FEP |
| ASM 3 (Channel 3) | 3 | EN (Enable) | 3 | BUL2 | 1FEP |
| ASM 4 (Channel 4) | 4 | EN (Enable) | 4 | BUL2 | 1FEP |
| ASM PB1 (mon/playback chan 1) | PB1 | DIS (Disable) | PB1 | PB | 1FEP |

### ASC Card Configuration

On both the operational and spare ASC, set the backup channel configuration using the seven jumpers on JP1. Using all seven jumpers, move the jumpers to the side of the block listing the number of output channels for your site configuration, the center row of pins being common. Example: Using figure 4 as a reference, if your site configuration had 5, 6, 9, or 10 channels, each jumper would connect from the center row of pins to the top row of pins. If your site configuration had 1, 2, 3, 4, 7, 8, 11, 12, or 13 channels, each jumper would connect from the center row of pins to the bottom row of pins.

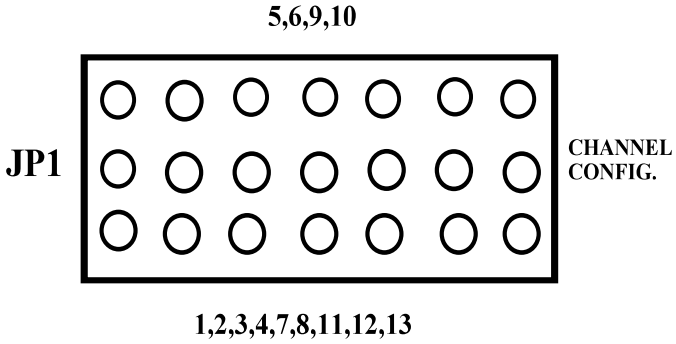


**Figure 4. ASM Card Jumper Block**

### Cable Label Between DECtalk Card and ASM Card

| From | To | Cable Label |
|---|---|---|
| 1FEP DECtalk 1 “J2” Port | ASM 1 “IN Port” | 1-1 |
| 1FEP DECtalk 2 “J2” Port | ASM 2 “IN Port” | 1-2 |
| 1FEP DECtalk 3 “J2” Port | ASM 3 “IN Port” | 1-3 |
| 1FEP DECtalk 4 “J2” Port | ASM 4 “IN Port” | 1-4 |
| 1FEP DECtalk 5 “J2” Port | ASM PB1 “IN Port” | 1-5 |

### Cable Label Between DECtalk Card and ASC Card

| From | To | Cable Label |
|---|---|---|
| 4BKUP DECtalk 1 “J2” Port | ASC “BKUP Audio 1” Port | 4-1 |
| 4BKUP DECtalk 2 “J2” Port | ASC “BKUP Audio 2” Port | 4-2 |
| 4BKUP DECtalk 3 “J2” Port | ASC “BKUP Audio 3” Port | 4-3 |
| 4BKUP DECtalk 4 “J2” Port | ASC “BKUP Audio 4” Port | 4-4 |
| 4BKUP DECtalk 5 “J2” Port | ASC “BKUP Audio 5” Port | 4-5 |

## E-1.2 Large Configuration (5 to 8 channels)

### E-1.2.1 5-Channel System

**Required MPs, FEPs, DECtalks, ASC, and ASMs**

The **Large 5-channel** system has two MPs (0MP and 5MP), three FEPs (1FEP, 2FEP, and 4BKUP), eleven DECtalk cards, one ASC card, and eight ASM cards:

| | | | |
|---|---|---|---|
| 0MP | main processor 1 | | |
| 5MP | main processor 2 | | |
| 1FEP | front end processor 1 | | |
| | LAN Card | LAN interface | (EISA slot 1) |
| | DECtalk 1 | channel 1 | (EISA slot 2) |
| | DECtalk 2 | channel 2 | (EISA slot 3) |
| | DECtalk 3 | channel 3 | (EISA slot 4) |
| | DECtalk 5 | PB1 | (EISA slot 6) |
| 2FEP | front end processor 2 | | |
| | LAN Card | LAN interface | (EISA slot 1) |
| | DECtalk 1 | channel 4 | (EISA slot 2) |
| | DECtalk 2 | channel 5 | (EISA slot 3) |
| | DECtalk 5 | PB2 | (EISA slot 6) |
| 4BKUP | backup front end processor | | |
| | LAN Card | LAN interface | (EISA slot 1) |
| | DECtalk 1 | backup channel 1 or 4 | (EISA slot 2) |
| | DECtalk 2 | backup channel 2 or 5 | (EISA slot 3) |
| | DECtalk 3 | backup channel 3 | (EISA slot 4) |
| | DECtalk 5 | backup PB1or PB2 | (EISA slot 6) |
| ASA | audio switch assembly | | |
| ASC | audio switch controller | | |
| | ASM 1 | channel 1 | (slot 1) |
| | ASM 2 | channel 2 | (slot 2) |
| | ASM 3 | channel 3 | (slot 3) |
| | ASM 4 | channel 4 | (slot 4) |
| | ASM 5 | channel 5 | (slot 5) |
| | ASM PB1 | monitor/playback channel 1 | (slot PB1) |
| | ASM PB2 | monitor/playback channel 2 | (slot PB2) |
| | ASM Spare | spare | (slot S) |

### DECtalk Card Configurations

There is one I/O jumper to be set on each DECtalk card:

| | FEP Name | FEP Slot # | I/O Address Jumper |
|---|---|---|---|
| 1FEP DECtalk 1 (channel 1) | 1FEP | 2 | 240 |
| 1FEP DECtalk 2 (channel 2) | 1FEP | 3 | 250 |
| 1FEP DECtalk 3 (channel 3) | 1FEP | 4 | 328 |
| 1FEP DECtalk 5 (mon/playback chan 1) | 1FEP | 6 | 380 |
| 2FEP DECtalk 1 (channel 4) | 2FEP | 2 | 240 |
| 2FEP DECtalk 2 (channel 5) | 2FEP | 3 | 250 |
| 2FEP DECtalk 5 (mon/playback chan 2) | 2FEP | 6 | 380 |
| 4BKUP DECtalk 1 | 4BKUP | 2 | 240 |
| 4BKUP DECtalk 2 | 4BKUP | 3 | 250 |
| 4BKUP DECtalk 3 | 4BKUP | 4 | 328 |
| 4BKUP DECtalk 5 | 4BKUP | 6 | 380 |

### ASM Card Configurations

There are five jumpers to be set on each ASM card:

| | ASA Slot # | Silence Alarm Jumper “JP1” | ACP Channel Sel. Jumper “JP2” & “JP3” | BKUP Live/ Playback Cntrl Jumper “JP4” | FEP Select Jumper “JP5” |
|---|---|---|---|---|---|
| ASM 1 (channel 1) | 1 | EN (Enable) | 1 | BUL2 | 1FEP |
| ASM 2 (channel 2) | 2 | EN (Enable) | 2 | BUL2 | 1FEP |
| ASM 3 (channel 3) | 3 | EN (Enable) | 3 | BUL2 | 1FEP |
| ASM 4 (channel 4) | 4 | EN (Enable) | 4 | BUL2 | 2FEP |
| ASM 5 (channel 5) | 5 | EN (Enable) | 5 | BUL2 | 2FEP |
| ASM PB1 (mon/playback chan 1) | PB1 | DIS (Disable) | PB1 | PB | 1FEP |
| ASM PB2 (mon/playback chan 2) | PB2 | DIS (Disable) | PB2 | PB | 2FEP |

### ASC Card Configuration

On both the operational and spare ASC, set the backup channel configuration using the seven jumpers on JP1. Using all seven jumpers, move the jumpers to the side of the block listing the number of output channels for your site configuration, the center row of pins being common. Example: Using figure 5 as a reference, if your site configuration had 5, 6, 9, or 10 channels, each jumper would connect from the center row of pins to the top row of pins. If your site configuration had 1, 2, 3, 4, 7, 8, 11, 12, or 13 channels, each jumper would connect from the center row of pins to the bottom row of pins.

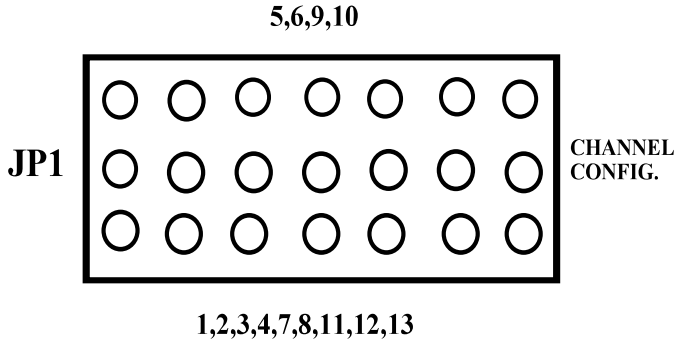


**Figure 5. ASM Card Jumper Block**

### Cable Label Between DECtalk Card and ASM Card

| From | To | Cable Label |
|---|---|---|
| 1FEP DECtalk 1 “J2” Port | ASM 1 “IN Port” | 1-1 |
| 1FEP DECtalk 2 “J2” Port | ASM 2 “IN Port” | 1-2 |
| 1FEP DECtalk 3 “J2” Port | ASM 3 “IN Port” | 1-3 |
| 2FEP DECtalk 1 “J2” Port | ASM 4 “IN Port” | 2-1 |
| 2FEP DECtalk 2 “J2” Port | ASM 5 “IN Port” | 2-2 |
| 1FEP DECtalk 5 “J2” Port | ASM PB1 “IN Port” | 1-5 |
| 2FEP DECtalk 5 “J2” Port | ASM PB2 “IN Port” | 2-5 |

### Cable Label Between DECtalk Card and ASC Card

| From | To | Cable Label |
|---|---|---|
| 4BKUP DECtalk 1 “J2” Port | ASC “BKUP Audio 1” Port | 4-1 |
| 4BKUP DECtalk 2 “J2” Port | ASC “BKUP Audio 2” Port | 4-2 |
| 4BKUP DECtalk 3 “J2” Port | ASC “BKUP Audio 3” Port | 4-3 |
| 4BKUP DECtalk 5 “J2” Port | ASC “BKUP Audio 5” Port | 4-5 |

### E-1.2.2 6-Channel System

**Required MPs, FEPs, DECtalks, ASC, and ASMs**

The **Large 6-channel** system has two MPs (0MP and 5MP), three FEPs (1FEP, 2FEP, and 4BKUP), 12 DECtalk cards, one ASC card, and nine ASM cards:

| | | | |
|---|---|---|---|
| 0MP | | main processor 1 | |
| 5MP | | main processor 2 | |
| 1FEP | | front end processor 1 | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 1 | (slot 2) |
| | DECtalk 2 | channel 2 | (slot 3) |
| | DECtalk 3 | channel 3 | (slot 4) |
| | DECtalk 5 | PB1 | (slot 6) |
| 2FEP | | front end processor 2 | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 4 | (slot 2) |
| | DECtalk 2 | channel 5 | (slot 3) |
| | DECtalk 3 | channel 6 | (slot 4) |
| | DECtalk 5 | PB2 | (slot 6) |
| 4BKUP | | backup front end processor | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | backup channel 1 or 4 | (slot 2) |
| | DECtalk 2 | backup channel 2 or 5 | (slot 3) |
| | DECtalk 3 | backup channel 3 or 6 | (slot 4) |
| | DECtalk 5 | backup PB1 or PB2 | (slot 6) |
| ASA | | audio switch assembly | |
| ASC | audio switch controller | | |
| | ASM 1 | channel 1 | (slot 1) |
| | ASM 2 | channel 2 | (slot 2) |
| | ASM 3 | channel 3 | (slot 3) |
| | ASM 4 | channel 4 | (slot 4) |
| | ASM 5 | channel 5 | (slot 5) |
| | ASM 6 | channel 6 | (slot 6) |
| | ASM PB1 | monitor/playback channel 1 | (slot PB1) |
| | ASM PB2 | monitor/playback channel 2 | (slot PB2) |
| | ASM Spare | spare | (slot S) |

**DECtalk Card Configurations**

There is one I/O jumper to be set on each DECtalk card:

| | FEP Name | FEP Slot # | I/O Address Jumper |
|---|---|---|---|
| 1FEP DECtalk 1 (channel 1) | 1FEP | 2 | 240 |
| 1FEP DECtalk 2 (channel 2) | 1FEP | 3 | 250 |
| 1FEP DECtalk 3 (channel 3) | 1FEP | 4 | 328 |
| 1FEP DECtalk 5 (mon/playback chan 1) | 1FEP | 6 | 380 |
| 2FEP DECtalk 1 (channel 4) | 2FEP | 2 | 240 |
| 2FEP DECtalk 2 (channel 5) | 2FEP | 3 | 250 |
| 2FEP DECtalk 3 (channel 6) | 2FEP | 4 | 328 |
| 2FEP DECtalk 5 (mon/playback chan 2) | 2FEP | 6 | 380 |
| 4BKUP DECtalk 1 | 4BKUP | 2 | 240 |
| 4BKUP DECtalk 2 | 4BKUP | 3 | 250 |
| 4BKUP DECtalk 3 | 4BKUP | 4 | 328 |
| 4BKUP DECtalk 5 | 4BKUP | 6 | 380 |

**ASM Card Configurations**

There are five jumpers to be set on each ASM card:

| | ASA Slot # | Silence Alarm Jumper "JP1" | ACP Channel Sel. Jumper "JP2" & "JP3" | BKUP Live/ Playback Cntrl Jumper "JP4" | FEP Select Jumper "JP5" |
|---|---|---|---|---|---|
| ASM 1 (channel 1) | 1 | EN (Enable) | 1 | BUL2 | 1FEP |
| ASM 2 (channel 2) | 2 | EN (Enable) | 2 | BUL2 | 1FEP |
| ASM 3 (channel 3) | 3 | EN (Enable) | 3 | BUL2 | 1FEP |
| ASM 4 (channel 4) | 4 | EN (Enable) | 4 | BUL2 | 2FEP |
| ASM 5 (channel 5) | 5 | EN (Enable) | 5 | BUL2 | 2FEP |
| ASM 6 (channel 6) | 6 | EN (Enable) | 6 | BUL2 | 2FEP |
| ASM PB1 (mon/playback chan 1) | PB1 | DIS (Disable) | PB1 | PB | 1FEP |
| ASM PB2 (mon/playback chan 2) | PB2 | DIS (Disable) | PB2 | PB | 2FEP |

### ASC Card Configuration

On both the operational and spare ASC, set the backup channel configuration using the seven jumpers on JP1. Using all seven jumpers, move the jumpers to the side of the block listing the number of output channels for your site configuration, the center row of pins being common. Example: Using figure 6 as a reference, if your site configuration had 5, 6, 9, or 10 channels, each jumper would connect from the center row of pins to the top row of pins. If your site configuration had 1, 2, 3, 4, 7, 8, 11, 12, or 13 channels, each jumper would connect from the center row of pins to the bottom row of pins.

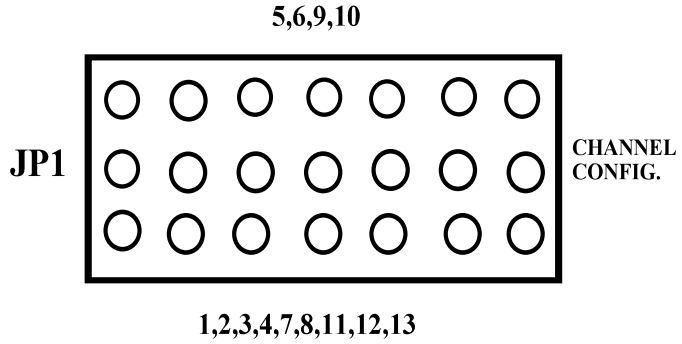


**Figure 6. ASM Card Jumper Block**

### Cable Label Between DECtalk Card and ASM Card

| From | To | Cable Label |
|---|---|---|
| 1FEP DECtalk 1 “J2” Port | ASM 1 “IN Port” | 1-1 |
| 1FEP DECtalk 2 “J2” Port | ASM 2 “IN Port” | 1-2 |
| 1FEP DECtalk 3 “J2” Port | ASM 3 “IN Port” | 1-3 |
| 2FEP DECtalk 1 “J2” Port | ASM 4 “IN Port” | 2-1 |
| 2FEP DECtalk 2 “J2” Port | ASM 5 “IN Port” | 2-2 |
| 2FEP DECtalk 3 “J2” Port | ASM 6 “IN Port” | 2-3 |
| 1FEP DECtalk 5 “J2” Port | ASM PB1 “IN Port” | 1-5 |
| 2FEP DECtalk 5 “J2” Port | ASM PB2 “IN Port” | 2-5 |

**Cable Label Between DECtalk Card and ASC Card**

| From | To | Cable Label |
|---|---|---|
| 4BKUP DECtalk 1 “J2” Port | ASC “BKUP Audio 1” Port | 4-1 |
| 4BKUP DECtalk 2 “J2” Port | ASC “BKUP Audio 2” Port | 4-2 |
| 4BKUP DECtalk 3 “J2” Port | ASC “BKUP Audio 3” Port | 4-3 |
| 4BKUP DECtalk 5 “J2” Port | ASC “BKUP Audio 5” Port | 4-5 |

### E-1.2.3 7-Channel System

**Required MPs, FEPs, DECtalks, ASC, and ASMs**

The **Large 7-channel** system has 2 MPs (0MP and 5MP), 3 FEPs (1FEP, 2FEP, and 4BKUP), 14 DECtalk cards, 1 ASC card, and 10 ASM cards:

| | | | |
|---|---|---|---|
| 0MP | main processor 1 | | |
| 5MP | main processor 2 | | |
| 1FEP | front end processor 1 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 1 | (slot 2) |
| | DECtalk 2 | channel 2 | (slot 3) |
| | DECtalk 3 | channel 3 | (slot 4) |
| | DECtalk 4 | channel 4 | (slot 5) |
| | DECtalk 5 | PB1 | (slot 6) |
| 2FEP | front end processor 2 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 5 | (slot 2) |
| | DECtalk 2 | channel 6 | (slot 3) |
| | DECtalk 3 | channel 7 | (slot 4) |
| | DECtalk 5 | PB2 | (slot 6) |
| 4BKUP | backup front end processor | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | backup channel 1 or 5 | (slot 2) |
| | DECtalk 2 | backup channel 2 or 6 | (slot 3) |
| | DECtalk 3 | backup channel 3 or 7 | (slot 4) |
| | DECtalk 4 | backup channel 4 | (slot 5) |
| | DECtalk 5 | backup PB1 or PB2 | (slot 6) |
| ASA | audio switch assembly | | |
| ASC | audio switch controller | | |
| | ASM 1 | channel 1 | (slot 1) |
| | ASM 2 | channel 2 | (slot 2) |
| | ASM 3 | channel 3 | (slot 3) |
| | ASM 4 | channel 4 | (slot 4) |
| | ASM 5 | channel 5 | (slot 5) |
| | ASM 6 | channel 6 | (slot 6) |
| | ASM 7 | channel 7 | (slot 7) |
| | ASM PB1 | monitor/playback channel 1 | (slot PB1) |
| | ASM PB2 | monitor/playback channel 2 | (slot PB2) |
| | ASM Spare | spare | (slot S) |

**DECtalk Card Configurations**

There is one I/O jumper to be set on each DECtalk card:

| | FEP Name | FEP Slot # | I/O Address Jumper |
|---|---|---|---|
| 1FEP DECtalk 1 (channel 1) | 1FEP | 2 | 240 |
| 1FEP DECtalk 2 (channel 2) | 1FEP | 3 | 250 |
| 1FEP DECtalk 3 (channel 3) | 1FEP | 4 | 328 |
| 1FEP DECtalk 4 (channel 4) | 1FEP | 5 | 360 |
| 1FEP DECtalk 5 (mon/playback chan 1) | 1FEP | 6 | 380 |
| 2FEP DECtalk 1 (channel 5) | 2FEP | 2 | 240 |
| 2FEP DECtalk 2 (channel 6) | 2FEP | 3 | 250 |
| 2FEP DECtalk 3 (channel 7) | 2FEP | 4 | 328 |
| 2FEP DECtalk 5 (mon/playback chan 2) | 2FEP | 6 | 380 |
| 4BKUP DECtalk 1 | 4BKUP | 2 | 240 |
| 4BKUP DECtalk 2 | 4BKUP | 3 | 250 |
| 4BKUP DECtalk 3 | 4BKUP | 4 | 328 |
| 4BKUP DECtalk 4 | 4BKUP | 5 | 360 |
| 4BKUP DECtalk 5 | 4BKUP | 6 | 380 |

**ASM Card Configurations**

There are five jumpers to be set on each ASM card:

| | ASA Slot # | Silence Alarm Jumper "JP1" | ACP Channel Sel. Jumper "JP2" & "JP3" | BKUP Live/ Playback Cntrl Jumper "JP4" | FEP Select Jumper "JP5" |
|---|---|---|---|---|---|
| ASM 1 (channel 1) | 1 | EN (Enable) | 1 | BUL2 | 1FEP |
| ASM 2 (channel 2) | 2 | EN (Enable) | 2 | BUL2 | 1FEP |
| ASM 3 (channel 3) | 3 | EN (Enable) | 3 | BUL2 | 1FEP |
| ASM 4 (channel 4) | 4 | EN (Enable) | 4 | BUL2 | 1FEP |
| ASM 5 (channel 5) | 5 | EN (Enable) | 5 | BUL2 | 2FEP |
| ASM 6 (channel 6) | 6 | EN (Enable) | 6 | BUL2 | 2FEP |
| ASM 7 (channel 7) | 7 | EN (Enable) | 7 | BUL2 | 2FEP |
| ASM PB1 (mon/playback chan 1) | PB1 | DIS (Disable) | PB1 | PB | 1FEP |
| ASM PB2 (mon/playback chan 2) | PB2 | DIS (Disable) | PB2 | PB | 2FEP |

### ASC Card Configuration

On both the operational and spare ASC, set the backup channel configuration using the seven jumpers on JP1. Using all seven jumpers, move the jumpers to the side of the block listing the number of output channels for your site configuration, the center row of pins being common. Example: Using figure 7 as a reference, if your site configuration had 5, 6, 9, or 10 channels, each jumper would connect from the center row of pins to the top row of pins. If your site configuration had 1, 2, 3, 4, 7, 8, 11, 12, or 13 channels, each jumper would connect from the center row of pins to the bottom row of pins.

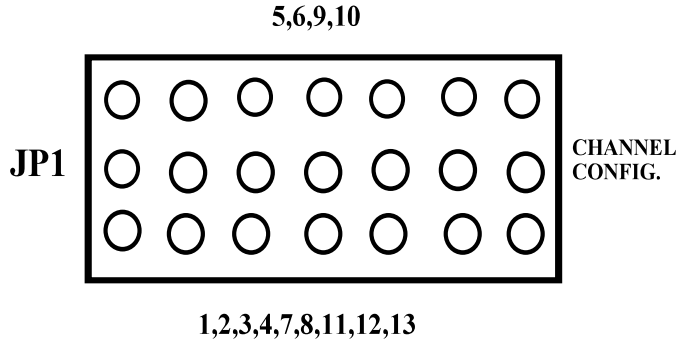


**Figure 7. ASM Card Jumper Block**

### Cable Label Between DECtalk Card and ASM Card

| From | To | Cable Label |
|---|---|---|
| 1FEP DECtalk 1 “J2” Port | ASM 1 “IN Port” | 1-1 |
| 1FEP DECtalk 2 “J2” Port | ASM 2 “IN Port” | 1-2 |
| 1FEP DECtalk 3 “J2” Port | ASM 3 “IN Port” | 1-3 |
| 1FEP DECtalk 4 “J2” Port | ASM 4 “IN Port” | 1-4 |
| 2FEP DECtalk 1 “J2” Port | ASM 5 “IN Port” | 2-1 |
| 2FEP DECtalk 2 “J2” Port | ASM 6 “IN Port” | 2-2 |
| 2FEP DECtalk 3 “J2” Port | ASM 7 “IN Port” | 2-3 |
| 1FEP DECtalk 5 “J2” Port | ASM PB1 “IN Port” | 1-5 |
| 2FEP DECtalk 5 “J2” Port | ASM PB2 “IN Port” | 2-5 |

**Cable Label Between DECtalk Card and ASC Card**

| From | To | Cable Label |
|---|---|---|
| 4BKUP DECtalk 1 “J2” Port | ASC “BKUP Audio 1” Port | 4-1 |
| 4BKUP DECtalk 2 “J2” Port | ASC “BKUP Audio 2” Port | 4-2 |
| 4BKUP DECtalk 3 “J2” Port | ASC “BKUP Audio 3” Port | 4-3 |
| 4BKUP DECtalk 4 “J2” Port | ASC “BKUP Audio 4” Port | 4-4 |
| 4BKUP DECtalk 5 “J2” Port | ASC “BKUP Audio 5” Port | 4-5 |

### E-1.2.4 8-Channel System

**Required MPs, FEPs, DECtalks, ASC, and ASMs**

The **Large 8-channel** system has 2 MPs (0MP and 5MP), 3 FEPs (1FEP, 2FEP, and 4BKUP), 15 DECtalk cards, 1 ASC card, and 11 ASM cards:

| | | | |
|---|---|---|---|
| 0MP | main processor 1 | | |
| 5MP | main processor 2 | | |
| 1FEP | front end processor 1 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 1 | (slot 2) |
| | DECtalk 2 | channel 2 | (slot 3) |
| | DECtalk 3 | channel 3 | (slot 4) |
| | DECtalk 4 | channel 4 | (slot 5) |
| | DECtalk 5 | PB1 | (slot 6) |
| 2FEP | front end processor 2 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 5 | (slot 2) |
| | DECtalk 2 | channel 6 | (slot 3) |
| | DECtalk 3 | channel 7 | (slot 4) |
| | DECtalk 4 | channel 8 | (slot 5) |
| | DECtalk 5 | PB2 | (slot 6) |
| 4BKUP | backup front end processor | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | backup channel 1 or 5 | (slot 2) |
| | DECtalk 2 | backup channel 2 or 6 | (slot 3) |
| | DECtalk 3 | backup channel 3 or 7 | (slot 4) |
| | DECtalk 4 | backup channel 4 or 8 | (slot 5) |
| | DECtalk 5 | backup PB1 or PB2 | (slot 6) |
| ASA | audio switch assembly | | |
| ASC | audio switch controller | | |
| | ASM 1 | channel 1 | (slot 1) |
| | ASM 2 | channel 2 | (slot 2) |
| | ASM 3 | channel 3 | (slot 3) |
| | ASM 4 | channel 4 | (slot 4) |
| | ASM 5 | channel 5 | (slot 5) |
| | ASM 6 | channel 6 | (slot 6) |
| | ASM 7 | channel 7 | (slot 7) |
| | ASM 8 | channel 8 | (slot 8) |
| | ASM PB1 | monitor/playback channel 1 | (slot PB1) |
| | ASM PB2 | monitor/playback channel 2 | (slot PB2) |
| | ASM Spare | spare | (slot S) |

**DECtalk Card Configurations**

There is one I/O jumper to be set on each DECtalk card:

| | FEP Name | FEP Slot # | I/O Address Jumper |
|---|---|---|---|
| 1FEP DECtalk 1 (channel 1) | 1FEP | 2 | 240 |
| 1FEP DECtalk 2 (channel 2) | 1FEP | 3 | 250 |
| 1FEP DECtalk 3 (channel 3) | 1FEP | 4 | 328 |
| 1FEP DECtalk 4 (channel 4) | 1FEP | 5 | 360 |
| 1FEP DECtalk 5 (mon/playback chan 1) | 1FEP | 6 | 380 |
| 2FEP DECtalk 1 (channel 5) | 2FEP | 2 | 240 |
| 2FEP DECtalk 2 (channel 6) | 2FEP | 3 | 250 |
| 2FEP DECtalk 3 (channel 7) | 2FEP | 4 | 328 |
| 2FEP DECtalk 4 (channel 8) | 2FEP | 5 | 360 |
| 2FEP DECtalk 5 (mon/playback chan 2) | 2FEP | 6 | 380 |
| 4BKUP DECtalk 1 | 4BKUP | 2 | 240 |
| 4BKUP DECtalk 2 | 4BKUP | 3 | 250 |
| 4BKUP DECtalk 3 | 4BKUP | 4 | 328 |
| 4BKUP DECtalk 4 | 4BKUP | 5 | 360 |
| 4BKUP DECtalk 5 | 4BKUP | 6 | 380 |

**ASM Card Configurations**

There are five jumpers to be set on each ASM card:

| | ASA Slot # | Silence Alarm Jumper "JP1" | ACP Channel Sel. Jumper "JP2" & "JP3" | BKUP Live/ Playback Cntrl Jumper "JP4" | FEP Select Jumper "JP5" |
|---|---|---|---|---|---|
| ASM 1 (channel 1) | 1 | EN (Enable) | 1 | BUL2 | 1FEP |
| ASM 2 (channel 2) | 2 | EN (Enable) | 2 | BUL2 | 1FEP |
| ASM 3 (channel 3) | 3 | EN (Enable) | 3 | BUL2 | 1FEP |
| ASM 4 (channel 4) | 4 | EN (Enable) | 4 | BUL2 | 1FEP |
| ASM 5 (channel 5) | 5 | EN (Enable) | 5 | BUL2 | 2FEP |
| ASM 6 (channel 6) | 6 | EN (Enable) | 6 | BUL2 | 2FEP |
| ASM 7 (channel 7) | 7 | EN (Enable) | 7 | BUL2 | 2FEP |
| ASM 8 (channel 8) | 8 | EN (Enable) | 8 | BUL2 | 2FEP |
| ASM PB1 (mon/playback chan 1) | PB1 | DIS (Disable) | PB1 | PB | 1FEP |
| ASM PB2 (mon/playback chan 2) | PB2 | DIS (Disable) | PB2 | PB | 2FEP |

### ASC Card Configuration

On both the operational and spare ASC, set the backup channel configuration using the seven jumpers on JP1. Using all seven jumpers, move the jumpers to the side of the block listing the number of output channels for your site configuration, the center row of pins being common. Example: Using figure 8 as a reference, if your site configuration had 5, 6, 9, or 10 channels, each jumper would connect from the center row of pins to the top row of pins. If your site configuration had 1, 2, 3, 4, 7, 8, 11, 12, or 13 channels, each jumper would connect from the center row of pins to the bottom row of pins.

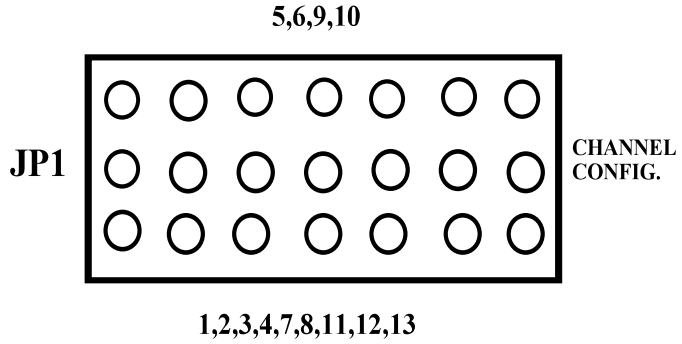


**Figure 8. ASM Card Jumper Block**

### Cable Label Between DECtalk Card and ASM Card

| From | To | Cable Label |
|---|---|---|
| 1FEP DECtalk 1 “J2” Port | ASM 1 “IN Port” | 1-1 |
| 1FEP DECtalk 2 “J2” Port | ASM 2 “IN Port” | 1-2 |
| 1FEP DECtalk 3 “J2” Port | ASM 3 “IN Port” | 1-3 |
| 1FEP DECtalk 4 “J2” Port | ASM 4 “IN Port” | 1-4 |
| 2FEP DECtalk 1 “J2” Port | ASM 5 “IN Port” | 2-1 |
| 2FEP DECtalk 2 “J2” Port | ASM 6 “IN Port” | 2-2 |
| 2FEP DECtalk 3 “J2” Port | ASM 7 “IN Port” | 2-3 |
| 2FEP DECtalk 4 “J2” Port | ASM 8 “IN Port” | 2-4 |
| 1FEP DECtalk 5 “J2” Port | ASM PB1 “IN Port” | 1-5 |
| 2FEP DECtalk 5 “J2” Port | ASM PB2 “IN Port” | 2-5 |

**Cable Label Between DECtalk Card and ASC Card**

| From | To | Cable Label |
|---|---|---|
| 4BKUP DECtalk 1 “J2” Port | ASC “BKUP Audio 1” Port | 4-1 |
| 4BKUP DECtalk 2 “J2” Port | ASC “BKUP Audio 2” Port | 4-2 |
| 4BKUP DECtalk 3 “J2” Port | ASC “BKUP Audio 3” Port | 4-3 |
| 4BKUP DECtalk 4 “J2” Port | ASC “BKUP Audio 4” Port | 4-4 |
| 4BKUP DECtalk 5 “J2” Port | ASC “BKUP Audio 5” Port | 4-5 |

## E-1.3 Maximum Configuration (9 to 13 channels)

### E-1.3.1 9-Channel System

**Required MPs, FEPs, DECtalks, ASC, and ASMs**

The **Maximum 9-channel** system has 2 MPs (0MP and 5MP), 4 FEPs (1FEP, 2FEP, 3FEP, and 4BKUP), 15 DECtalk cards, 1 ASC card, and 12 ASM cards:

| | | | |
|---|---|---|---|
| 0MP | main processor 1 | | |
| 5MP | main processor 2 | | |
| 1FEP | front end processor 1 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 1 | (slot 2) |
| | DECtalk 2 | channel 2 | (slot 3) |
| | DECtalk 3 | channel 3 | (slot 4) |
| | DECtalk 5 | PB1 | (slot 6) |
| 2FEP | front end processor 2 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 4 | (slot 2) |
| | DECtalk 2 | channel 5 | (slot 3) |
| | DECtalk 3 | channel 6 | (slot 4) |
| | DECtalk 5 | PB2 | (slot 6) |
| 3FEP | front end processor 3 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 7 | (slot 2) |
| | DECtalk 2 | channel 8 | (slot 3) |
| | DECtalk 3 | channel 9 | (slot 4) |
| 4BKUP | backup front end processor | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | backup channel 1, 4, or 7 | (slot 2) |
| | DECtalk 2 | backup channel 2, 5, or 8 | (slot 3) |
| | DECtalk 3 | backup channel 3, 6, or 9 | (slot 4) |
| | DECtalk 5 | backup PB1 or PB2 | (slot 6) |
| ASA | audio switch assembly | | |
| ASC | audio switch controller | | |
| | ASM 1 | channel 1 | (slot 1) |
| | ASM 2 | channel 2 | (slot 2) |
| | ASM 3 | channel 3 | (slot 3) |
| | ASM 4 | channel 4 | (slot 4) |
| | ASM 5 | channel 5 | (slot 5) |
| | ASM 6 | channel 6 | (slot 6) |
| | ASM 7 | channel 7 | (slot 7) |
| | ASM 8 | channel 8 | (slot 8) |
| | ASM 9 | channel 9 | (slot 9) |
| | ASM PB1 | monitor/playback channel 1 | (slot PB1) |
| | ASM PB2 | monitor/playback channel 2 | (slot PB2) |
| | ASM Spare | spare | (slot S) |

**DECtalk Card Configurations**

There is one I/O jumper to be set on each DECtalk card:

| | FEP Name | FEP Slot # | I/O Address Jumper |
|---|---|---|---|
| 1FEP DECtalk 1 (channel 1) | 1FEP | 2 | 240 |
| 1FEP DECtalk 2 (channel 2) | 1FEP | 3 | 250 |
| 1FEP DECtalk 3 (channel 3) | 1FEP | 4 | 328 |
| 1FEP DECtalk 5 (mon/playback chan 1) | 1FEP | 6 | 380 |
| 2FEP DECtalk 1 (channel 4) | 2FEP | 2 | 240 |
| 2FEP DECtalk 2 (channel 5) | 2FEP | 3 | 250 |
| 2FEP DECtalk 3 (channel 6) | 2FEP | 4 | 328 |
| 2FEP DECtalk 5 (mon/playback chan 2) | 2FEP | 6 | 380 |
| 3FEP DECtalk 1 (channel 7) | 3FEP | 2 | 240 |
| 3FEP DECtalk 2 (channel 8) | 3FEP | 3 | 250 |
| 3FEP DECtalk 3 (channel 9) | 3FEP | 4 | 328 |
| 4BKUP DECtalk 1 | 4BKUP | 2 | 240 |
| 4BKUP DECtalk 2 | 4BKUP | 3 | 250 |
| 4BKUP DECtalk 3 | 4BKUP | 4 | 328 |
| 4BKUP DECtalk 5 | 4BKUP | 6 | 380 |

**ASM Card Configurations**

There are five jumpers to be set on each ASM card:

| | ASA Slot # | Silence Alarm Jumper "JP1" | ACP Channel Sel. Jumper "JP2" & "JP3" | BKUP Live/ Playback Cntrl Jumper "JP4" | FEP Select Jumper "JP5" |
|---|---|---|---|---|---|
| ASM 1 (channel 1) | 1 | EN (Enable) | 1 | BUL2 | 1FEP |
| ASM 2 (channel 2) | 2 | EN (Enable) | 2 | BUL2 | 1FEP |
| ASM 3 (channel 3) | 3 | EN (Enable) | 3 | BUL2 | 1FEP |
| ASM 4 (channel 4) | 4 | EN (Enable) | 4 | BUL2 | 2FEP |
| ASM 5 (channel 5) | 5 | EN (Enable) | 5 | BUL2 | 2FEP |
| ASM 6 (channel 6) | 6 | EN (Enable) | 6 | BUL2 | 2FEP |
| ASM 7 (channel 7) | 7 | EN (Enable) | 7 | BUL2 | 3FEP |
| ASM 8 (channel 8) | 8 | EN (Enable) | 8 | BUL2 | 3FEP |
| ASM 9 (channel 9) | 9 | EN (Enable) | 9 | BUL2 | 3FEP |
| ASM PB1 (mon/playback chan 1) | PB1 | DIS (Disable) | PB1 | PB | 1FEP |
| ASM PB2 (mon/playback chan 2) | PB2 | DIS (Disable) | PB2 | PB | 2FEP |

### ASC Card Configuration

On both the operational and spare ASC, set the backup channel configuration using the seven jumpers on JP1. Using all seven jumpers, move the jumpers to the side of the block listing the number of output channels for your site configuration, the center row of pins being common. Example: Using figure 9 as a reference, if your site configuration had 5, 6, 9, or 10 channels, each jumper would connect from the center row of pins to the top row of pins. If your site configuration had 1, 2, 3, 4, 7, 8, 11, 12, or 13 channels, each jumper would connect from the center row of pins to the bottom row of pins.

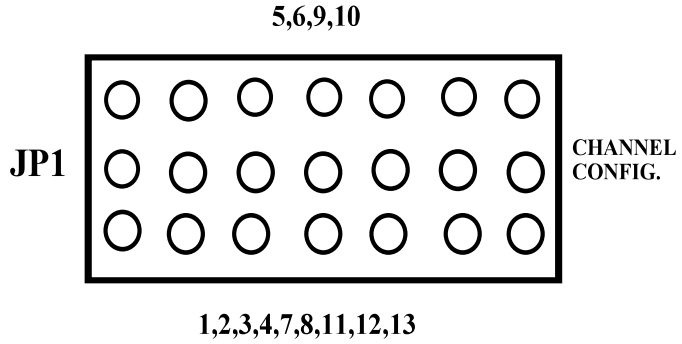


**Figure 9. ASM Card Jumper Block**

### Cable Label Between DECtalk Card and ASM Card

| From | To | Cable Label |
|---|---|---|
| 1FEP DECtalk 1 “J2” Port | ASM 1 “IN Port” | 1-1 |
| 1FEP DECtalk 2 “J2” Port | ASM 2 “IN Port” | 1-2 |
| 1FEP DECtalk 3 “J2” Port | ASM 3 “IN Port” | 1-3 |
| 2FEP DECtalk 1 “J2” Port | ASM 4 “IN Port” | 2-1 |
| 2FEP DECtalk 2 “J2” Port | ASM 5 “IN Port” | 2-2 |
| 2FEP DECtalk 3 “J2” Port | ASM 6 “IN Port” | 2-3 |
| 3FEP DECtalk 1 “J2” Port | ASM 7 “IN Port” | 3-1 |
| 3FEP DECtalk 2 “J2” Port | ASM 8 “IN Port” | 3-2 |
| 3FEP DECtalk 3 “J2” Port | ASM 9 “IN Port” | 3-3 |
| 1FEP DECtalk 5 “J2” Port | ASM PB1 “IN Port” | 1-5 |
| 2FEP DECtalk 5 “J2” Port | ASM PB2 “IN Port” | 2-5 |

**Cable Label Between DECtalk Card and ASC Card**

| From | To | Cable Label |
|---|---|---|
| 4BKUP DECtalk 1 “J2” Port | ASC “BKUP Audio 1” Port | 4-1 |
| 4BKUP DECtalk 2 “J2” Port | ASC “BKUP Audio 2” Port | 4-2 |
| 4BKUP DECtalk 3 “J2” Port | ASC “BKUP Audio 3” Port | 4-3 |
| 4BKUP DECtalk 5 “J2” Port | ASC “BKUP Audio 5” Port | 4-5 |

### E-1.3.2 10-Channel System

**Required MPs, FEPs, DECtalks, ASC, and ASMs**

The **Maximum 10-channel** system has 2 MPs (0MP and 5MP), 4 FEPs (1FEP, 2FEP, 3FEP, and 4BKUP), 16 DECtalk cards, 1 ASC card, and 13 ASM cards:

| | | | |
|---|---|---|---|
| 0MP | main processor 1 | | |
| 5MP | main processor 2 | | |
| 1FEP | front end processor 1 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 1 | (slot 2) |
| | DECtalk 2 | channel 2 | (slot 3) |
| | DECtalk 3 | channel 3 | (slot 4) |
| | DECtalk 5 | PB1 | (slot 6) |
| 2FEP | front end processor 2 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 4 | (slot 2) |
| | DECtalk 2 | channel 5 | (slot 3) |
| | DECtalk 3 | channel 6 | (slot 4) |
| | DECtalk 5 | PB2 | (slot 6) |
| 3FEP | front end processor 3 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 7 | (slot 2) |
| | DECtalk 2 | channel 8 | (slot 3) |
| | DECtalk 3 | channel 9 | (slot 4) |
| | DECtalk 5 | channel 10 | (slot 6) |
| 4BKUP | backup front end processor | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | backup channel 1, 4, or 7 | (slot 2) |
| | DECtalk 2 | backup channel 2, 5, or 8 | (slot 3) |
| | DECtalk 3 | backup channel 3, 6, or 9 | (slot 4) |
| | DECtalk 5 | backup PB1, PB2, or 10 | (slot 6) |
| ASA | audio switch assembly | | |

| | | | |
|---|---|---|---|
| ASC | audio switch controller | | |
| | ASM 1 | channel 1 | (slot 1) |
| | ASM 2 | channel 2 | (slot 2) |
| | ASM 3 | channel 3 | (slot 3) |
| | ASM 4 | channel 4 | (slot 4) |
| | ASM 5 | channel 5 | (slot 5) |
| | ASM 6 | channel 6 | (slot 6) |
| | ASM 7 | channel 7 | (slot 7) |
| | ASM 8 | channel 8 | (slot 8) |
| | ASM 9 | channel 9 | (slot 9) |
| | ASM 10 | channel 10 | (slot 10) |
| | ASM PB1 | monitor/playback channel 1 | (slot PB1) |
| | ASM PB2 | monitor/playback channel 2 | (slot PB2) |
| | ASM Spare | spare | (slot S) |

**DECtalk Card Configurations**

There is one I/O jumper to be set on each DECtalk card:

| | FEP Name | FEP Slot # | I/O Address Jumper |
|---|---|---|---|
| 1FEP DECtalk 1 (channel 1) | 1FEP | 2 | 240 |
| 1FEP DECtalk 2 (channel 2) | 1FEP | 3 | 250 |
| 1FEP DECtalk 3 (channel 3) | 1FEP | 4 | 328 |
| 1FEP DECtalk 5 (mon/playback chan 1) | 1FEP | 6 | 380 |
| 2FEP DECtalk 1 (channel 4) | 2FEP | 2 | 240 |
| 2FEP DECtalk 2 (channel 5) | 2FEP | 3 | 250 |
| 2FEP DECtalk 3 (channel 6) | 2FEP | 4 | 328 |
| 2FEP DECtalk 5 (mon/playback chan 2) | 2FEP | 6 | 380 |
| 3FEP DECtalk 1 (channel 7) | 3FEP | 2 | 240 |
| 3FEP DECtalk 2 (channel 8) | 3FEP | 3 | 250 |
| 3FEP DECtalk 3 (channel 9) | 3FEP | 4 | 328 |
| 3FEP DECtalk 5 (channel 10) | 3FEP | 6 | 380 |
| 4BKUP DECtalk 1 | 4BKUP | 2 | 240 |
| 4BKUP DECtalk 2 | 4BKUP | 3 | 250 |
| 4BKUP DECtalk 3 | 4BKUP | 4 | 328 |
| 4BKUP DECtalk 5 | 4BKUP | 6 | 380 |

**ASM Card Configurations**

There are five jumpers to be set on each ASM card:

| | ASA Slot # | Silence Alarm Jumper "JP1" | ACP Channel Sel. Jumper "JP2" & "JP3" | BKUP Live/ Playback Cntrl Jumper "JP4" | FEP Select Jumper "JP5" |
|---|---|---|---|---|---|
| ASM 1 (channel 1) | 1 | EN (Enable) | 1 | BUL2 | 1FEP |
| ASM 2 (channel 2) | 2 | EN (Enable) | 2 | BUL2 | 1FEP |
| ASM 3 (channel 3) | 3 | EN (Enable) | 3 | BUL2 | 1FEP |
| ASM 4 (channel 4) | 4 | EN (Enable) | 4 | BUL2 | 2FEP |
| ASM 5 (channel 5) | 5 | EN (Enable) | 5 | BUL2 | 2FEP |
| ASM 6 (channel 6) | 6 | EN (Enable) | 6 | BUL2 | 2FEP |
| ASM 7 (channel 7) | 7 | EN (Enable) | 7 | BUL2 | 3FEP |
| ASM 8 (channel 8) | 8 | EN (Enable) | 8 | BUL2 | 3FEP |
| ASM 9 (channel 9) | 9 | EN (Enable) | 9 | BUL2 | 3FEP |
| ASM 10 (channel 10) | 10 | EN (Enable) | 10 | BUL2 | 3FEP |
| ASM PB1 (mon/playback chan 1) | PB1 | DIS (Disable) | PB1 | PB | 1FEP |
| ASM PB2 (mon/playback chan 2) | PB2 | DIS (Disable) | PB2 | PB | 2FEP |

### ASC Card Configuration

On both the operational and spare ASC, set the backup channel configuration using the seven jumpers on JP1. Using all seven jumpers, move the jumpers to the side of the block listing the number of output channels for your site configuration, the center row of pins being common. Example: Using figure 10 as a reference, if your site configuration had 5, 6, 9, or 10 channels, each jumper would connect from the center row of pins to the top row of pins. If your site configuration had 1, 2, 3, 4, 7, 8, 11, 12, or 13 channels, each jumper would connect from the center row of pins to the bottom row of pins.

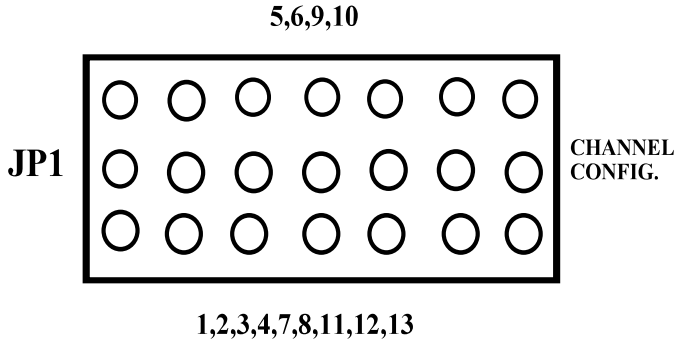


**Figure 10. ASM Card Jumper Block**

### Cable Label Between DECtalk Card and ASM Card

| From | To | Cable Label |
|---|---|---|
| 1FEP DECtalk 1 “J2” Port | ASM 1 “IN Port” | 1-1 |
| 1FEP DECtalk 2 “J2” Port | ASM 2 “IN Port” | 1-2 |
| 1FEP DECtalk 3 “J2” Port | ASM 3 “IN Port” | 1-3 |
| 2FEP DECtalk 1 “J2” Port | ASM 4 “IN Port” | 2-1 |
| 2FEP DECtalk 2 “J2” Port | ASM 5 “IN Port” | 2-2 |
| 2FEP DECtalk 3 “J2” Port | ASM 6 “IN Port” | 2-3 |
| 3FEP DECtalk 1 “J2” Port | ASM 7 “IN Port” | 3-1 |
| 3FEP DECtalk 2 “J2” Port | ASM 8 “IN Port” | 3-2 |
| 3FEP DECtalk 3 “J2” Port | ASM 9 “IN Port” | 3-3 |
| 3FEP DECtalk 5 “J2” Port | ASM 10 “IN Port” | 3-5 |
| 1FEP DECtalk 5 “J2” Port | ASM PB1 “IN Port” | 1-5 |
| 2FEP DECtalk 5 “J2” Port | ASM PB2 “IN Port” | 2-5 |

**Cable Label Between DECtalk Card and ASC Card**

| From | To | Cable Label |
|---|---|---|
| 4BKUP DECtalk 1 “J2” Port | ASC “BKUP Audio 1” Port | 4-1 |
| 4BKUP DECtalk 2 “J2” Port | ASC “BKUP Audio 2” Port | 4-2 |
| 4BKUP DECtalk 3 “J2” Port | ASC “BKUP Audio 3” Port | 4-3 |
| 4BKUP DECtalk 5 “J2” Port | ASC “BKUP Audio 5” Port | 4-5 |

### E-1.3.3 11-Channel System

**Required MPs, FEPs, DECtalks, ASC, and ASMs**

The **Maximum 11-channel** system has 2 MPs (0MP and 5MP), 4 FEPs (1FEP, 2FEP, 3FEP, and 4BKUP), 18 DECtalk cards, 1 ASC card, and 14 ASM cards:

| | | | |
|---|---|---|---|
| 0MP | main processor 1 | | |
| 5MP | main processor 2 | | |
| 1FEP | front end processor 1 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 1 | (slot 2) |
| | DECtalk 2 | channel 2 | (slot 3) |
| | DECtalk 3 | channel 3 | (slot 4) |
| | DECtalk 4 | channel 4 | (slot 5) |
| | DECtalk 5 | PB1 | (slot 6) |
| 2FEP | front end processor 2 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 5 | (slot 2) |
| | DECtalk 2 | channel 6 | (slot 3) |
| | DECtalk 3 | channel 7 | (slot 4) |
| | DECtalk 4 | channel 8 | (slot 5) |
| | DECtalk 5 | PB2 | (slot 6) |
| 3FEP | front end processor 3 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 9 | (slot 2) |
| | DECtalk 2 | channel 10 | (slot 3) |
| | DECtalk 3 | channel 11 | (slot 4) |
| 4BKUP | backup front end processor | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | backup channel 1, 5, or 9 | (slot 2) |
| | DECtalk 2 | backup channel 2, 6, or 10 | (slot 3) |
| | DECtalk 3 | backup channel 3, 7, or 11 | (slot 4) |
| | DECtalk 4 | backup channel 4, 8, or 12 | (slot 5) |
| | DECtalk 5 | backup PB1, PB2, or 13 | (slot 6) |
| ASA | audio switch assembly | | |

| | | | |
|---|---|---|---|
| ASC | audio switch controller | | |
| | ASM 1 | channel 1 | (slot 1) |
| | ASM 2 | channel 2 | (slot 2) |
| | ASM 3 | channel 3 | (slot 3) |
| | ASM 4 | channel 4 | (slot 4) |
| | ASM 5 | channel 5 | (slot 5) |
| | ASM 6 | channel 6 | (slot 6) |
| | ASM 7 | channel 7 | (slot 7) |
| | ASM 8 | channel 8 | (slot 8) |
| | ASM 9 | channel 9 | (slot 9) |
| | ASM 10 | channel 10 | (slot 10) |
| | ASM 11 | channel 11 | (slot 11) |
| | ASM PB1 | monitor/playback channel 1 | (slot PB1) |
| | ASM PB2 | monitor/playback channel 2 | (slot PB2) |
| | ASM Spare | spare | (slot S) |

**DECtalk Card Configurations**

There is one I/O jumper to be set on each DECtalk card:

| | FEP Name | FEP Slot # | I/O Address Jumper |
|---|---|---|---|
| 1FEP DECtalk 1 (channel 1) | 1FEP | 2 | 240 |
| 1FEP DECtalk 2 (channel 2) | 1FEP | 3 | 250 |
| 1FEP DECtalk 3 (channel 3) | 1FEP | 4 | 328 |
| 1FEP DECtalk 4 (channel 4) | 1FEP | 5 | 360 |
| 1FEP DECtalk 5 (mon/playback chan 1) | 1FEP | 6 | 380 |
| 2FEP DECtalk 1 (channel 5) | 2FEP | 2 | 240 |
| 2FEP DECtalk 2 (channel 6) | 2FEP | 3 | 250 |
| 2FEP DECtalk 3 (channel 7) | 2FEP | 4 | 328 |
| 2FEP DECtalk 4 (channel 8) | 2FEP | 5 | 360 |
| 2FEP DECtalk 5 (mon/playback chan 2) | 2FEP | 6 | 380 |
| 3FEP DECtalk 1 (channel 9) | 3FEP | 2 | 240 |
| 3FEP DECtalk 2 (channel 10) | 3FEP | 3 | 250 |
| 3FEP DECtalk 3 (channel 11) | 3FEP | 4 | 328 |
| 4BKUP DECtalk 1 | 4BKUP | 2 | 240 |
| 4BKUP DECtalk 2 | 4BKUP | 3 | 250 |
| 4BKUP DECtalk 3 | 4BKUP | 4 | 328 |
| 4BKUP DECtalk 4 | 4BKUP | 5 | 360 |
| 4BKUP DECtalk 5 | 4BKUP | 6 | 380 |

**ASM Card Configurations**

There are five jumpers to be set on each ASM card:

| | ASA Slot # | Silence Alarm Jumper "JP1" | ACP Channel Sel. Jumper "JP2" & "JP3" | BKUP Live/ Playback Cntrl Jumper "JP4" | FEP Select Jumper "JP5" |
|---|---|---|---|---|---|
| ASM 1 (channel 1) | 1 | EN (Enable) | 1 | BUL2 | 1FEP |
| ASM 2 (channel 2) | 2 | EN (Enable) | 2 | BUL2 | 1FEP |
| ASM 3 (channel 3) | 3 | EN (Enable) | 3 | BUL2 | 1FEP |
| ASM 4 (channel 4) | 4 | EN (Enable) | 4 | BUL2 | 1FEP |
| ASM 5 (channel 5) | 5 | EN (Enable) | 5 | BUL2 | 2FEP |
| ASM 6 (channel 6) | 6 | EN (Enable) | 6 | BUL2 | 2FEP |
| ASM 7 (channel 7) | 7 | EN (Enable) | 7 | BUL2 | 2FEP |
| ASM 8 (channel 8) | 8 | EN (Enable) | 8 | BUL2 | 2FEP |
| ASM 9 (channel 9) | 9 | EN (Enable) | 9 | BUL2 | 3FEP |
| ASM 10 (channel 10) | 10 | EN (Enable) | 10 | BUL2 | 3FEP |
| ASM 11 (channel 11) | 11 | EN (Enable) | 11 | BUL2 | 3FEP |
| ASM PB1 (mon/playback chan 1) | PB1 | DIS (Disable) | PB1 | PB | 1FEP |
| ASM PB2 (mon/playback chan 2) | PB2 | DIS (Disable) | PB2 | PB | 2FEP |

### ASC Card Configuration

On both the operational and spare ASC, set the backup channel configuration using the seven jumpers on JP1. Using all seven jumpers, move the jumpers to the side of the block listing the number of output channels for your site configuration, the center row of pins being common. Example: Using figure 11 as a reference, if your site configuration had 5, 6, 9, or 10 channels, each jumper would connect from the center row of pins to the top row of pins. If your site configuration had 1, 2, 3, 4, 7, 8, 11, 12, or 13 channels, each jumper would connect from the center row of pins to the bottom row of pins.

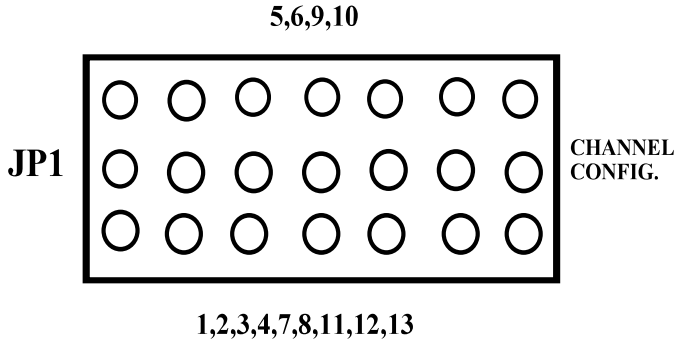


**Figure 11. ASM Card Jumper Block**

### Cable Label Between DECtalk Card and ASM Card

| From | To | Cable Label |
|---|---|---|
| 1FEP DECtalk 1 “J2” Port | ASM 1 “IN Port” | 1-1 |
| 1FEP DECtalk 2 “J2” Port | ASM 2 “IN Port” | 1-2 |
| 1FEP DECtalk 3 “J2” Port | ASM 3 “IN Port” | 1-3 |
| 1FEP DECtalk 4 “J2” Port | ASM 4 “IN Port” | 1-4 |
| 2FEP DECtalk 1 “J2” Port | ASM 5 “IN Port” | 2-1 |
| 2FEP DECtalk 2 “J2” Port | ASM 6 “IN Port” | 2-2 |
| 2FEP DECtalk 3 “J2” Port | ASM 7 “IN Port” | 2-3 |
| 2FEP DECtalk 4 “J2” Port | ASM 8 “IN Port” | 2-4 |
| 3FEP DECtalk 1 “J2” Port | ASM 9 “IN Port” | 3-1 |
| 3FEP DECtalk 2 “J2” Port | ASM 10 “IN Port” | 3-2 |
| 3FEP DECtalk 3 “J2” Port | ASM 11 “IN Port” | 3-3 |
| 1FEP DECtalk 5 “J2” Port | ASM PB1 “IN Port” | 1-5 |
| 2FEP DECtalk 5 “J2” Port | ASM PB2 “IN Port” | 2-5 |

**Cable Label Between DECtalk Card and ASC Card**

| From | To | Cable Label |
|---|---|---|
| 4BKUP DECtalk 1 “J2” Port | ASC “BKUP Audio 1” Port | 4-1 |
| 4BKUP DECtalk 2 “J2” Port | ASC “BKUP Audio 2” Port | 4-2 |
| 4BKUP DECtalk 3 “J2” Port | ASC “BKUP Audio 3” Port | 4-3 |
| 4BKUP DECtalk 4 “J2” Port | ASC “BKUP Audio 4” Port | 4-4 |
| 4BKUP DECtalk 5 “J2” Port | ASC “BKUP Audio 5” Port | 4-5 |

### E-1.3.4 12-Channel System

**Required MPs, FEPs, DECtalks, ASC, and ASMs**

The **Maximum 12-channel** system has 2 MPs (0MP and 5MP), 4 FEPs (1FEP, 2FEP, 3FEP, and 4BKUP), 19 DECtalk cards, 1 ASC card, and 15 ASM cards:

| | | | |
|---|---|---|---|
| 0MP | main processor 1 | | |
| 5MP | main processor 2 | | |
| 1FEP | front end processor 1 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 1 | (slot 2) |
| | DECtalk 2 | channel 2 | (slot 3) |
| | DECtalk 3 | channel 3 | (slot 4) |
| | DECtalk 4 | channel 4 | (slot 5) |
| | DECtalk 5 | PB1 | (slot 6) |
| 2FEP | front end processor 2 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 5 | (slot 2) |
| | DECtalk 2 | channel 6 | (slot 3) |
| | DECtalk 3 | channel 7 | (slot 4) |
| | DECtalk 4 | channel 8 | (slot 5) |
| | DECtalk 5 | PB2 | (slot 6) |
| 3FEP | front end processor 3 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 9 | (slot 2) |
| | DECtalk 2 | channel 10 | (slot 3) |
| | DECtalk 3 | channel 11 | (slot 4) |
| | DECtalk 4 | channel 12 | (slot 5) |
| 4BKUP | backup front end processor | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | backup channel 1, 5, or 9 | (slot 2) |
| | DECtalk 2 | backup channel 2, 6, or 10 | (slot 3) |
| | DECtalk 3 | backup channel 3, 7, or 11 | (slot 4) |
| | DECtalk 4 | backup channel 4, 8, or 12 | (slot 5) |
| | DECtalk 5 | backup PB1 or PB2 | (slot 6) |
| ASA | audio switch assembly | | |

| | | | |
|---|---|---|---|
| ASC | audio switch controller | | |
| | ASM 1 | channel 1 | (slot 1) |
| | ASM 2 | channel 2 | (slot 2) |
| | ASM 3 | channel 3 | (slot 3) |
| | ASM 4 | channel 4 | (slot 4) |
| | ASM 5 | channel 5 | (slot 5) |
| | ASM 6 | channel 6 | (slot 6) |
| | ASM 7 | channel 7 | (slot 7) |
| | ASM 8 | channel 8 | (slot 8) |
| | ASM 9 | channel 9 | (slot 9) |
| | ASM 10 | channel 10 | (slot 10) |
| | ASM 11 | channel 11 | (slot 11) |
| | ASM 12 | channel 12 | (slot 12) |
| | ASM PB1 | monitor/playback channel 1 | (slot PB1) |
| | ASM PB2 | monitor/playback channel 2 | (slot PB2) |
| | ASM Spare | spare | (slot S) |

**DECtalk Card Configurations**

There is one I/O jumper to be set on each DECtalk card:

| | FEP Name | FEP Slot # | I/O Address Jumper |
|---|---|---|---|
| 1FEP DECtalk 1 (channel 1) | 1FEP | 2 | 240 |
| 1FEP DECtalk 2 (channel 2) | 1FEP | 3 | 250 |
| 1FEP DECtalk 3 (channel 3) | 1FEP | 4 | 328 |
| 1FEP DECtalk 4 (channel 4) | 1FEP | 5 | 360 |
| 1FEP DECtalk 5 (mon/playback chan 1) | 1FEP | 6 | 380 |
| 2FEP DECtalk 1 (channel 5) | 2FEP | 2 | 240 |
| 2FEP DECtalk 2 (channel 6) | 2FEP | 3 | 250 |
| 2FEP DECtalk 3 (channel 7) | 2FEP | 4 | 328 |
| 2FEP DECtalk 4 (channel 8) | 2FEP | 5 | 360 |
| 2FEP DECtalk 5 (mon/playback chan 2) | 2FEP | 6 | 380 |
| 3FEP DECtalk 1 (channel 9) | 3FEP | 2 | 240 |
| 3FEP DECtalk 2 (channel 10) | 3FEP | 3 | 250 |
| 3FEP DECtalk 3 (channel 11) | 3FEP | 4 | 328 |
| 3FEP DECtalk 4 (channel 12) | 3FEP | 5 | 360 |
| 4BKUP DECtalk 1 | 4BKUP | 2 | 240 |
| 4BKUP DECtalk 2 | 4BKUP | 3 | 250 |
| 4BKUP DECtalk 3 | 4BKUP | 4 | 328 |
| 4BKUP DECtalk 4 | 4BKUP | 5 | 360 |
| 4BKUP DECtalk 5 | 4BKUP | 6 | 380 |

**ASM Card Configurations**

There are five jumpers to be set on each ASM card:

| | ASA Slot # | Silence Alarm Jumper "JP1" | ACP Channel Sel. Jumper "JP2" & "JP3" | BKUP Live/ Playback Cntrl Jumper "JP4" | FEP Select Jumper "JP5" |
|---|---|---|---|---|---|
| ASM 1 (channel 1) | 1 | EN (Enable) | 1 | BUL2 | 1FEP |
| ASM 2 (channel 2) | 2 | EN (Enable) | 2 | BUL2 | 1FEP |
| ASM 3 (channel 3) | 3 | EN (Enable) | 3 | BUL2 | 1FEP |
| ASM 4 (channel 4) | 4 | EN (Enable) | 4 | BUL2 | 1FEP |
| ASM 5 (channel 5) | 5 | EN (Enable) | 5 | BUL2 | 2FEP |
| ASM 6 (channel 6) | 6 | EN (Enable) | 6 | BUL2 | 2FEP |
| ASM 7 (channel 7) | 7 | EN (Enable) | 7 | BUL2 | 2FEP |
| ASM 8 (channel 8) | 8 | EN (Enable) | 8 | BUL2 | 2FEP |
| ASM 9 (channel 9) | 9 | EN (Enable) | 9 | BUL2 | 3FEP |
| ASM 10 (channel 10) | 10 | EN (Enable) | 10 | BUL2 | 3FEP |
| ASM 11 (channel 11) | 11 | EN (Enable) | 11 | BUL2 | 3FEP |
| ASM 12 (channel 12) | 12 | EN (Enable) | 12 | BUL2 | 3FEP |
| ASM PB1 (mon/playback chan 1) | PB1 | DIS (Disable) | PB1 | PB | 1FEP |
| ASM PB2 (mon/playback chan 2) | PB2 | DIS (Disable) | PB2 | PB | 2FEP |

### ASC Card Configuration

On both the operational and spare ASC, set the backup channel configuration using the seven jumpers on JP1. Using all seven jumpers, move the jumpers to the side of the block listing the number of output channels for your site configuration, the center row of pins being common. Example: Using figure 12 as a reference, if your site configuration had 5, 6, 9, or 10 channels, each jumper would connect from the center row of pins to the top row of pins. If your site configuration had 1, 2, 3, 4, 7, 8, 11, 12, or 13 channels, each jumper would connect from the center row of pins to the bottom row of pins.

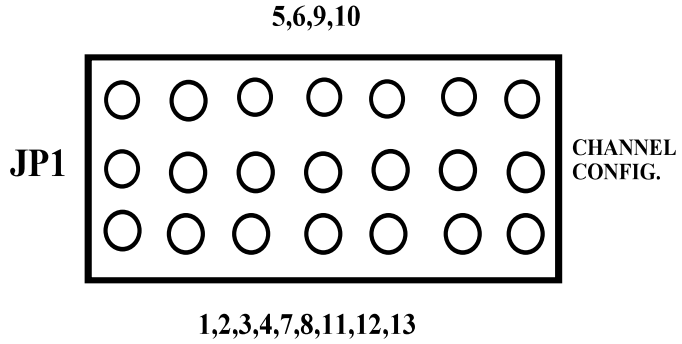


**Figure 12. ASM Card Jumper Block**

**Cable Label Between DECtalk Card and ASM Card**

| From | To | Cable Label |
|---|---|---|
| 1FEP DECtalk 1 “J2” Port | ASM 1 “IN Port” | 1-1 |
| 1FEP DECtalk 2 “J2” Port | ASM 2 “IN Port” | 1-2 |
| 1FEP DECtalk 3 “J2” Port | ASM 3 “IN Port” | 1-3 |
| 1FEP DECtalk 4 “J2” Port | ASM 4 “IN Port” | 1-4 |
| 2FEP DECtalk 1 “J2” Port | ASM 5 “IN Port” | 2-1 |
| 2FEP DECtalk 2 “J2” Port | ASM 6 “IN Port” | 2-2 |
| 2FEP DECtalk 3 “J2” Port | ASM 7 “IN Port” | 2-3 |
| 2FEP DECtalk 4 “J2” Port | ASM 8 “IN Port” | 2-4 |
| 3FEP DECtalk 1 “J2” Port | ASM 9 “IN Port” | 3-1 |
| 3FEP DECtalk 2 “J2” Port | ASM 10 “IN Port” | 3-2 |
| 3FEP DECtalk 3 “J2” Port | ASM 11 “IN Port” | 3-3 |
| 3FEP DECtalk 4 “J2” Port | ASM 12 “IN Port” | 3-4 |
| 1FEP DECtalk 5 “J2” Port | ASM PB1 “IN Port” | 1-5 |
| 2FEP DECtalk 5 “J2” Port | ASM PB2 “IN Port” | 2-5 |

**Cable Label Between DECtalk Card and ASC Card**

| From | To | Cable Label |
|---|---|---|
| 4BKUP DECtalk 1 “J2” Port | ASC “BKUP Audio 1” Port | 4-1 |
| 4BKUP DECtalk 2 “J2” Port | ASC “BKUP Audio 2” Port | 4-2 |
| 4BKUP DECtalk 3 “J2” Port | ASC “BKUP Audio 3” Port | 4-3 |
| 4BKUP DECtalk 4 “J2” Port | ASC “BKUP Audio 4” Port | 4-4 |
| 4BKUP DECtalk 5 “J2” Port | ASC “BKUP Audio 5” Port | 4-5 |

### E-1.3.5 13-Channel System

**Required MPs, FEPs, DECtalks, ASC, and ASMs**

The **Maximum 13-channel** system has 2 MPs (0MP and 5MP), 4 FEPs (1FEP, 2FEP, 3FEP, and 4BKUP), 20 DECtalk cards, 1 ASC card, and 16 ASM cards:

| | | | |
|---|---|---|---|
| 0MP | main processor 1 | | |
| 5MP | main processor 2 | | |
| 1FEP | front end processor 1 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 1 | (slot 2) |
| | DECtalk 2 | channel 2 | (slot 3) |
| | DECtalk 3 | channel 3 | (slot 4) |
| | DECtalk 4 | channel 4 | (slot 5) |
| | DECtalk 5 | PB1 | (slot 6) |
| 2FEP | front end processor 2 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 5 | (slot 2) |
| | DECtalk 2 | channel 6 | (slot 3) |
| | DECtalk 3 | channel 7 | (slot 4) |
| | DECtalk 4 | channel 8 | (slot 5) |
| | DECtalk 5 | PB2 | (slot 6) |
| 3FEP | front end processor 3 | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | channel 9 | (slot 2) |
| | DECtalk 2 | channel 10 | (slot 3) |
| | DECtalk 3 | channel 11 | (slot 4) |
| | DECtalk 4 | channel 12 | (slot 5) |
| | DECtalk 5 | channel 13 | (slot 6) |
| 4BKUP | backup front end processor | | |
| | LAN Card | LAN interface | (slot 1) |
| | DECtalk 1 | backup channel 1, 5, or 9 | (slot 2) |
| | DECtalk 2 | backup channel 2, 6, or 10 | (slot 3) |
| | DECtalk 3 | backup channel 3, 7, or 11 | (slot 4) |
| | DECtalk 4 | backup channel 4, 8, or 12 | (slot 5) |
| | DECtalk 5 | backup PB1, PB2, or 13 | (slot 6) |
| ASA | audio switch assembly | | |

| | | | |
|---|---|---|---|
| ASC | audio switch controller | | |
| | ASM 1 | channel 1 | (slot 1) |
| | ASM 2 | channel 2 | (slot 2) |
| | ASM 3 | channel 3 | (slot 3) |
| | ASM 4 | channel 4 | (slot 4) |
| | ASM 5 | channel 5 | (slot 5) |
| | ASM 6 | channel 6 | (slot 6) |
| | ASM 7 | channel 7 | (slot 7) |
| | ASM 8 | channel 8 | (slot 8) |
| | ASM 9 | channel 9 | (slot 9) |
| | ASM 10 | channel 10 | (slot 10) |
| | ASM 11 | channel 11 | (slot 11) |
| | ASM 12 | channel 12 | (slot 12) |
| | ASM 13 | channel 13 | (slot 13) |
| | ASM PB1 | monitor/playback channel 1 | (slot PB1) |
| | ASM PB2 | monitor/playback channel 2 | (slot PB2) |
| | ASM Spare | spare | (slot S) |

**DECtalk Card Configurations**

There is one I/O jumper to be set on each DECtalk card:

| | FEP Name | FEP Slot # | I/O Address Jumper |
|---|---|---|---|
| 1FEP DECtalk 1 (channel 1) | 1FEP | 2 | 240 |
| 1FEP DECtalk 2 (channel 2) | 1FEP | 3 | 250 |
| 1FEP DECtalk 3 (channel 3) | 1FEP | 4 | 328 |
| 1FEP DECtalk 4 (channel 4) | 1FEP | 5 | 360 |
| 1FEP DECtalk 5 (mon/playback chan 1) | 1FEP | 6 | 380 |
| 2FEP DECtalk 1 (channel 5) | 2FEP | 2 | 240 |
| 2FEP DECtalk 2 (channel 6) | 2FEP | 3 | 250 |
| 2FEP DECtalk 3 (channel 7) | 2FEP | 4 | 328 |
| 2FEP DECtalk 4 (channel 8) | 2FEP | 5 | 360 |
| 2FEP DECtalk 5 (mon/playback chan 2) | 2FEP | 6 | 380 |
| 3FEP DECtalk 1 (channel 9) | 3FEP | 2 | 240 |
| 3FEP DECtalk 2 (channel 10) | 3FEP | 3 | 250 |
| 3FEP DECtalk 3 (channel 11) | 3FEP | 4 | 328 |
| 3FEP DECtalk 4 (channel 12) | 3FEP | 5 | 360 |
| 3FEP DECtalk 5 (channel 12) | 3FEP | 6 | 380 |
| 4BKUP DECtalk 1 | 4BKUP | 2 | 240 |
| 4BKUP DECtalk 2 | 4BKUP | 3 | 250 |
| 4BKUP DECtalk 3 | 4BKUP | 4 | 328 |
| 4BKUP DECtalk 4 | 4BKUP | 5 | 360 |
| 4BKUP DECtalk 5 | 4BKUP | 6 | 380 |

**ASM Card Configurations**

There are five jumpers to be set on each ASM card:

| | ASA Slot # | Silence Alarm Jumper "JP1" | ACP Channel Sel. Jumper "JP2" & "JP3" | BKUP Live/ Playback Cntrl Jumper "JP4" | FEP Select Jumper "JP5" |
|---|---|---|---|---|---|
| ASM 1 (channel 1) | 1 | EN (Enable) | 1 | BUL2 | 1FEP |
| ASM 2 (channel 2) | 2 | EN (Enable) | 2 | BUL2 | 1FEP |
| ASM 3 (channel 3) | 3 | EN (Enable) | 3 | BUL2 | 1FEP |
| ASM 4 (channel 4) | 4 | EN (Enable) | 4 | BUL2 | 1FEP |
| ASM 5 (channel 5) | 5 | EN (Enable) | 5 | BUL2 | 2FEP |
| ASM 6 (channel 6) | 6 | EN (Enable) | 6 | BUL2 | 2FEP |
| ASM 7 (channel 7) | 7 | EN (Enable) | 7 | BUL2 | 2FEP |
| ASM 8 (channel 8) | 8 | EN (Enable) | 8 | BUL2 | 2FEP |
| ASM 9 (channel 9) | 9 | EN (Enable) | 9 | BUL2 | 3FEP |
| ASM 10 (channel 10) | 10 | EN (Enable) | 10 | BUL2 | 3FEP |
| ASM 11 (channel 11) | 11 | EN (Enable) | 11 | BUL2 | 3FEP |
| ASM 12 (channel 12) | 12 | EN (Enable) | 12 | BUL2 | 3FEP |
| ASM 13 (channel 13) | 13 | EN (Enable) | 13 | BUL2 | 3FEP |
| ASM PB1 (mon/playback chan 1) | PB1 | DIS (Disable) | PB1 | PB | 1FEP |
| ASM PB2 (mon/playback chan 2) | PB2 | DIS (Disable) | PB2 | PB | 2FEP |

### ASC Card Configuration

On both the operational and spare ASC, set the backup channel configuration using the seven jumpers on JP1. Using all seven jumpers, move the jumpers to the side of the block listing the number of output channels for your site configuration, the center row of pins being common. Example: Using figure 13 as a reference, if your site configuration had 5, 6, 9, or 10 channels, each jumper would connect from the center row of pins to the top row of pins. If your site configuration had 1, 2, 3, 4, 7, 8, 11, 12, or 13 channels, each jumper would connect from the center row of pins to the bottom row of pins.

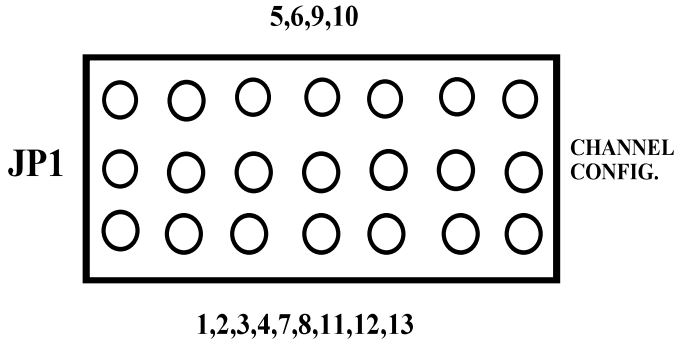


**Figure 13. ASM Card Jumper Block**

**Cable Label Between DECtalk Card and ASM Card**

| From | To | Cable Label |
|---|---|---|
| 1FEP DECtalk 1 “J2” Port | ASM 1 “IN Port” | 1-1 |
| 1FEP DECtalk 2 “J2” Port | ASM 2 “IN Port” | 1-2 |
| 1FEP DECtalk 3 “J2” Port | ASM 3 “IN Port” | 1-3 |
| 1FEP DECtalk 4 “J2” Port | ASM 4 “IN Port” | 1-4 |
| 2FEP DECtalk 1 “J2” Port | ASM 5 “IN Port” | 2-1 |
| 2FEP DECtalk 2 “J2” Port | ASM 6 “IN Port” | 2-2 |
| 2FEP DECtalk 3 “J2” Port | ASM 7 “IN Port” | 2-3 |
| 2FEP DECtalk 4 “J2” Port | ASM 8 “IN Port” | 2-4 |
| 3FEP DECtalk 1 “J2” Port | ASM 9 “IN Port” | 3-1 |
| 3FEP DECtalk 2 “J2” Port | ASM 10 “IN Port” | 3-2 |
| 3FEP DECtalk 3 “J2” Port | ASM 11 “IN Port” | 3-3 |
| 3FEP DECtalk 4 “J2” Port | ASM 12 “IN Port” | 3-4 |
| 3FEP DECtalk 5 “J2” Port | ASM 13 “IN Port” | 3-5 |
| 1FEP DECtalk 5 “J2” Port | ASM PB1 “IN Port” | 1-5 |
| 2FEP DECtalk 5 “J2” Port | ASM PB2 “IN Port” | 2-5 |

**Cable Label Between DECtalk Card and ASC Card**

| From | To | Cable Label |
|---|---|---|
| 4BKUP DECtalk 1 “J2” Port | ASC “BKUP Audio 1” Port | 4-1 |
| 4BKUP DECtalk 2 “J2” Port | ASC “BKUP Audio 2” Port | 4-2 |
| 4BKUP DECtalk 3 “J2” Port | ASC “BKUP Audio 3” Port | 4-3 |
| 4BKUP DECtalk 4 “J2” Port | ASC “BKUP Audio 4” Port | 4-4 |
| 4BKUP DECtalk 5 “J2” Port | ASC “BKUP Audio 5” Port | 4-5 |

## E-2 CRS Expansions

CRS expansions can be grouped into two basic cases:

(1) expansion without an additional FEP, i.e., within the same configuration category, or
(2) expansion with an additional FEP, i.e., expands to a different configuration category.

Each expansion category is discussed, i.e., **Typical**, **Large**, and **Maximum**. In each expansion case, the required hardware components (over the existing operational system) and their associated setup and installation procedures are described.

### E-2.1 Case 1: Expansion without an additional FEP

#### E-2.1.1 Typical Configuration

**Expand from 1-Channel System to 2-Channel System**

Additional Hardware Components Required for Expansion:

- Two DECtalk cards (Agency Stock Number [ASN]: B440-2A2A11)
- One ASM card (ASN: B440-2A6A3)
- Two new DECtalk-ASM Audio Cables (ASN: B440-4W12),
  (Label one with "1-2" label, and label another with "4-2" label)
- One Transmitter Audio Output Cable (prepared by the site)
- One NWRSAME (prepared by the site)
- One NWRSAME-ACP Interface Cable (ASN: B440-1A5W4)

Hardware Setup and Installation:

1. New DECtalk cards:
   (Detailed setup and installation procedures are shown in Section 4.4.4.9.2 of the CRS Maintenance Manual.)
   a. Setup both new DECtalk cards with the same I/O address: 250.
   b. Install one DECtalk card into slot 3 of 1FEP.
   c. Install one DECtalk card into slot 3 of 4BKUP.
2. New ASM card:
   (Detailed setup procedures are shown in Appendix I, Section I-3.2.1.1, *ACP and ASA Equipment*. Detailed installation procedures are shown in Section 4.4.4.20.3 of the *CRS Maintenance Manual*.)
   a. Setup the *Silence Alarm Disable/Enable Jumper* (labeled JP1) to **Enable**.
   b. Setup both the *Channel Select Jumpers* (labeled JP2 and JP3) to **Channel 2**.
   c. Setup the *Backup Live and Playback Control Jumper* (labeled JP4) to **BUL2**.

d. Setup the *FEP Select Jumper* (labeled JP5) to **1FEP**.

e. Install new ASM card into slot 2 of the ASA chassis.

3. New DECtalk-ASM Audio Cables:

   a. Install new cable with "1-2" label to connect the "J2" port of new DECtalk card at slot 3 of the 1FEP to the IN port of new ASM card at slot 2 of ASA chassis.

   b. Install new cable with "4-2" label to connect the "J2" port of new DECtalk card at slot 3 of the 4BKUP to the "BKUP Audio 2" port of the ASC card.

4. New Transmitter Audio Output Cable:

   Install new cable to connect the "OUT 1" port of new ASM card at slot 2 of ASA chassis to the Demarc panel.

5. New NWRSAME and NWRSAME-ACP Interface Cable (a detailed wiring diagram is shown in Figure I-10 of Appendix I, *ACP and ASA Equipment*.)

   a. Install new NWRSAME to the top panel of 0MP workstation.

   b. Install new NWRSAME-ACP interface cable to connect Pin 2, 6, 7, 9, and 10 of NWRSAME rear connector to the "NWRSAME INPUT socket 2" port of ACP1 rear panel.

**Expand from 2-Channel System to 3-Channel System**

Additional Hardware Components Required for Expansion:

- Two DECtalk cards (ASN: B440-2A2A11)
- One ASM card (ASN: B440-2A6A3)
- Two DECtalk-ASM audio cables (ASN: B440-4W12)
  (Label one with "1-3" label, and label another with "4-3" label)
- One transmitter audio output cable (prepared by the site)
- One NWRSAME (prepared by the site)
- One NWRSAME-ACP interface cable (ASN: B440-1A5W4)

Hardware Setup and Installation:

1. New DECtalk cards: (Detailed setup and installation procedures are shown in Section 4.4.4.9.2 of the *CRS Maintenance Manual*.)

   a. Setup both new DECtalk cards with the same I/O address: 328

   b. Install one DECtalk card into slot 4 of 1FEP.

   c. Install one DECtalk card into slot 4 of 4BKUP.

2. New ASM card: (Detailed setup procedures are shown in Section I-3.2.1.1 of Appendix I, *ACP and ASA Equipment*. Detailed installation procedures are in Section 4.4.4.20.3 of the *CRS Maintenance Manual*.)

   a. Setup the *Silence Alarm Disable/Enable Jumper* (labeled JP1) to **Enable**.

   b. Setup both the *Channel Select Jumpers* (labeled JP2 and JP3) to **Channel 3**.

   c. Setup the *Backup Live and Playback Control Jumper* (labeled JP4) to **BUL2.**

   d. Setup the *FEP Select Jumper* (labeled JP5) to **1FEP.**

   e. Install a new ASM card into slot 3 of the ASA chassis.

3. New DECtalk-ASM Audio Cables:

   a. Install new cable with “1-3” label to connect the “J2” port of new DECtalk card at slot 4 of the 1FEP to the IN port of new ASM card at slot 3 of ASA chassis.

   b. Install new cable with “4-3” label to connect the “J2” port of new DECtalk card at slot 4 of the 4BKUP to the “BKUP Audio 3” port of the ASC card.

4. New Transmitter Audio Output Cable:

   Install new cable to connect the OUT1 port of new ASM card at slot 3 of ASA chassis to the Demarc panel.

5. New NWRSAME and NWRSAME-ACP Interface Cable: (a detailed wiring diagram is shown in Figure I-10 of Appendix I, *ACP and ASA Equipment*).

   a. Install new NWRSAME to the top panel of 0MP workstation.

   b. Install new NWRSAME-ACP interface cable to connect Pin 2, 6, 7, 9, and 10 of NWRSAME rear connector to the “NWRSAME INPUT socket 3” port of ACP1 rear panel.

**Expand from 3-Channel System to 4-Channel System**

Additional Hardware Components Required for Expansion:

- Two DECtalk cards (ASN: B440-2A2A11)
- One ASM card (ASN: B440-2A6A3)
- Two DECtalk-ASM Audio Cables (ASN: B440-4W12) (Label one with "1-4" label, and label another with "4-4" label)
- One Transmitter Audio Output Cable (prepared by the site)
- One NWRSAME (prepared by the site)
- One NWRSAME-ACP Interface Cable (ASN: B440-1A5W4)

Hardware Setup and Installation:

1. New DECtalk cards: (Detailed setup and installation procedures are shown in Section 4.4.4.9.2 of the *CRS Maintenance Manual*.)
   a. Setup both new DECtalk cards with the same I/O address: 360
   b. Install one DECtalk card into slot 5 of 1FEP.
   c. Install one DECtalk card into slot 5 of 4BKUP.
2. New ASM card: (Detailed setup procedures are in Appendix I, Section I-3.2.1.1, *ACP and ASA Equipment*. Detailed installation procedures are shown on Section 4.4.4.20.3 of the *CRS Maintenance Manual*.)
   a. Setup the *Silence Alarm Disable/Enable Jumper* (labeled JP1) to **Enable**.
   b. Setup both the *Channel Select Jumpers* (labeled JP2 and JP3) to **Channel 4**,
   c. Setup the *Backup Live and Playback Control Jumper* (labeled JP4) to **BUL2.**
   d. Setup the *FEP Select Jumper* (labeled JP5) to **1FEP**.
   e. Install a new ASM card into slot 4 of the ASA chassis.
3. New DECtalk-ASM Audio Cables:
   a. Install new cable with "1-4" label to connect the "J2" port of new DECtalk card at slot 5 of the 1FEP to the IN port of new ASM card at slot 4 of ASA chassis.
   b. Install new cable with "4-4" label to connect the "J2" port of new DECtalk card at slot 5 of the 4BKUP to the "BKUP Audio 4" port of the ASC card.
4. New Transmitter Audio Output Cable:

   Install new cable to connect the OUT1 port of new ASM card at slot 4 of ASA chassis to the Demarc panel.

5. New NWRSAME and NWRSAME-ACP Interface Cable (a detailed wiring diagram is shown in Figure I-10 of in Appendix I, *ACP and ASA Equipment*.)

   a. Install new NWRSAME to the top panel of 0MP workstation.

   b. Install new NWRSAME-ACP interface cable to connect Pin 2, 6, 7, 9, and 10 of NWRSAME rear connector to the “NWRSAME INPUT socket 4” port of ACP1 rear panel.

### E-2.1.2 Large Configuration

**Expand from 5-Channel System to 6-Channel System**

Additional Hardware Components Required for Expansion:

- One DECtalk card (ASN: B440-2A2A11)
- One ASM card (ASN: B440-2A6A3)
- One DECtalk-ASM Audio Cable (ASN: B440-4W12) (label new cable with “2-3" label)
- One Transmitter Audio Output Cable (prepared by the site)
- One NWRSAME (prepared by the site)
- One NWRSAME-ACP Interface Cable (ASN: B440-1A5W4)

Hardware Setup and Installation:

1. New DECtalk card: (Detailed setup and installation procedures are shown in Section 4.4.4.9.2 of the *CRS Maintenance Manual*.)

   a. Setup new DECtalk card with the I/O address: 328

   b. Install new DECtalk card into slot 4 of 2FEP.

2. New ASM card: (Detailed setup procedures are in Appendix I, Section I-3.2.1.1, *ACP and ASA Equipment*. Detailed installation procedures are in Section 4.4.4.20.3 of the *CRS Maintenance Manual*.)

   a. Setup the *Silence Alarm Disable/Enable Jumper* (labeled JP1) to **Enable**.

   b. Setup both the *Channel Select Jumpers* (labeled JP2 and JP3) to **Channel 6**.

   c. Setup the *Backup Live and Playback Control Jumper* (labeled JP4) to **BUL2**.

   d. Setup the *FEP Select Jumper* (labeled JP5) to **2FEP**.

   e. Install a new ASM card into slot 6 of ASA chassis.

3. New DECtalk-ASM Audio Cable:

   Install new cable with “2-3” label to connect the “J2” port of new DECtalk card at slot 4 of the 2FEP to the IN port of new ASM card at slot 6 of ASA chassis.

4. New Transmitter Audio Output Cable:

   Install new cable to connect the OUT1 port of new ASM card at slot 6 of ASA chassis to the Demarc panel.

5. New NWRSAME and NWRSAME-ACP Interface Cable (a detailed wiring diagram is shown in Figure I-10 of Appendix I, *ACP and ASA Equipment*).

   a. Install new NWRSAME to the top panel of 5MP workstation.

   b. Install new NWRSAME-ACP interface cable to connect Pin 2, 6, 7, 9, and 10 of NWRSAME rear connector to the "NWRSAME INPUT socket 2" port of ACP2 rear panel.

**Expand from 6-Channel System to 7-Channel System**

Additional Hardware Components Required for Expansion:

- Two DECtalk cards (ASN: B440-2A2A11)
- One ASM card ((ASN: B440-2A6A3)
- Two DECtalk-ASM Audio Cables (ASN: B440-4W12)
- (Label one with "1-4" label, and label another with "4-4" label)
- One Transmitter Audio Output Cable (prepared by the site)
- One NWRSAME (prepared by the site)
- One NWRSAME-ACP Interface Cable (ASN: B440-1A5W4)

Hardware Setup and Installation:

1. New DECtalk cards: (Detailed setup and installation procedures are in Section 4.4.4.9.2 of the CRS Maintenance Manual.)

   a. Setup both new DECtalk cards with the same I/O address: 360

   b. Install one DECtalk card into slot 5 of 1FEP.

   c. Install one DECtalk card into slot 5 of 4BKUP.

2. New ASM card: (Detailed setup procedures are in Appendix I, Section I-3.2.1.1, *ACP and ASA Equipment*. Detailed installation procedures are in Section 4.4.4.20.3 of the *CRS Maintenance Manual*.)

   a. Setup the *Silence Alarm Disable/Enable Jumper* (labeled JP1) to **Enable**.

   b. Setup both the *Channel Select Jumpers* (labeled JP2 and JP3) to **Channel 7**.

   c. Setup the *Backup Live and Playback Control Jumper* (labeled JP4) to **BUL2**.

   d. Setup the *FEP Select Jumper* (labeled JP5) to **2FEP**.

   e. Install a new ASM card into slot 7 of the ASA chassis.

3. Existing ASM card at slot 4 of ASA chassis:

   a. Disconnect the DECtalk-ASM Audio Cable with “2-1” label from the IN port.

   b. Disconnect the Transmitter Audio Output cable from the OUT1 port.

   c. Loosen two front panel screws and extract the ASM card from slot 4.

   d. Change the FEP Select Jumper (labeled as JP5) from “2FEP” to “1FEP”.

   e. Insert the ASM card back to slot 4 and tighten two front panel screws.

   f. Connect the Transmitter Audio Output cable to the OUT1 port.

4. Operational ASC card: (Detailed setup procedures are in Appendix I, Section I-3.2.1.1, *ACP and ASA Equipment*. Detailed installation procedures are in Section 4.4.4.20.2 of the *CRS Maintenance Manual*.)

   a. Disconnect four DECtalk-ASM audio cables (with labels “4-1”, “4-2”, “4-3”, “4-5”).

   b. Disconnect two ACP-ASC audio cables.

   c. Disconnect one ASC-4BKUP parallel port interface cable.

   d. Disconnect two ACP-ASC control cables.

   e. Loosen four front panel screws and extract the ASC card.

   f. Setup the backup channel configuration jumper (label JP1) by moving all 7 jumpers to connect left and middle columns.

   g. Insert the ASC card back to the ASA and tighten the four front panel screws.

   h. Reconnect two ACP-ASC control cables.

   i. Reconnect one ASC-4BKUP parallel port interface cable.

   j. Reconnect two ACP-ASC audio cables.

   k. Reconnect four DECtalk-ASM audio cables.

5. Spare ASC card:

   Setup the backup channel configuration jumper (label JP1) by moving all 7 jumpers to connect left and middle columns.

6. New DECtalk-ASM Audio Cables:

   a. Install new cable with “1-4” label to connect the “J2” port of new DECtalk card at slot 5 of the 1FEP to the IN port of existing ASM card at slot 4 of ASA chassis.

   b. Install new cable with “4-4” label to connect the “J2” port of new DECtalk card at slot 5 of the 4BKUP to the “BKUP Audio 4” port of the ASC card.

7. Existing DECtalk-ASM Audio Cables:

   a. Disconnect the DECtalk-ASM Audio Cable with “2-2” label from IN port of ASM card at slot 5 of ASA chassis.

   b. Disconnect the DECtalk-ASM Audio Cable with “2-3” label from IN port of ASM card at slot 6 of ASA chassis.

   c. Connect the DECtalk-ASM Audio Cable with “2-1” label to IN port of ASM card at slot 5 of ASA chassis.

   d. Connect the DECtalk-ASM Audio Cable with “2-2” label to IN port of ASM card at slot 6 of ASA chassis.

   e. Connect the DECtalk-ASM Audio Cable with “2-3” label to IN port of ASM card at slot 7 of ASA chassis.

8. New Transmitter Audio Output Cable:

   Install new cable to connect the OUT1 port of new ASM card at slot 7 of ASA chassis to the Demarc panel.

9. New NWRSAME and NWRSAME-ACP Interface Cable (a detailed wiring diagram is shown in Figure I-10 of Appendix I, *ACP and ASA Equipment*).

   a. Install new NWRSAME to the top panel of 5MP workstation.

   b. Install the NWRSAME-ACP interface cable to connect Pin 2, 6, 7, 9, and 10 of NWRSAME rear connector to the “NWRSAME INPUT socket 3” port of ACP2 rear panel.

**Expand from 7-Channel System to 8-Channel System**

Additional Hardware Components Required for Expansion:

- One DECtalk card (ASN: B440-2A2A11)
- One ASM card (ASN: B440-2A6A3)
- One DECtalk-ASM Audio Cable (ASN: B440-4W12) (label new cable with “2-4” label)
- One Transmitter Audio Output Cable (prepared by the site)
- One NWRSAME (prepared by the site)
- One NWRSAME-ACP Interface Cable (ASN: B440-1A5W4)

Hardware Setup and Installation:

1. New DECtalk card: (Detailed setup and installation procedures are in Section 4.4.4.9.2 of the *CRS Maintenance Manual*.)

   a. Setup new DECtalk card with the I/O address: 360.

   b. Install new DECtalk card into slot 5 of 2FEP.

2. New ASM card: (Detailed setup procedures are in Appendix I, Section I-3.2.1.1, *ACP and ASA Equipment*. Detailed installation procedures are in Section 4.4.4.20.3 of the *CRS Maintenance Manual*.)

   a. Setup the *Silence Alarm Disable/Enable Jumper* (labeled JP1) to **Enable**.

   b. Setup both the *Channel Select Jumpers* (labeled JP2 and JP3) to **Channel 8**.

   c. Setup the *Backup Live and Playback Control Jumper* (labeled JP4) to **BUL2**.

   d. Setup the *FEP Select Jumper* (labeled JP5) to **2FEP**.

   e. Install a new ASM card into slot 8 of the ASA chassis.

3. New DECtalk-ASM Audio Cable:

   Install new cable with "2-4" label to connect the "J2" port of new DECtalk card at slot 5 of the 2FEP to the IN port of new ASM card at slot 8 of ASA chassis.

4. New Transmitter Audio Output Cable:

   Install new cable to connect the OUT1 port of new ASM card at slot 8 of ASA chassis to the Demarc panel.

5. New NWRSAME and NWRSAME-ACP Interface Cable (a detailed wiring diagram is shown in Figure I-10 of Appendix I, *ACP and ASA Equipment*).

   a. Install new NWRSAME to the top panel of 5MP workstation.

   b. Install new NWRSAME-ACP interface cable to connect pins 2, 6, 7, 9, and 10 of NWRSAME rear connector to the "NWRSAME INPUT socket 4" port of ACP2 rear panel.

### E-2.1.3 Maximum Configuration

**Expand from 9-Channel System to 10-Channel System**

Additional Hardware Components Required for Expansion:

- One DECtalk card (ASN: B440-2A2A11)
- One ASM card (ASN: B440-2A6A3)
- One DECtalk-ASM Audio Cable (ASN: B440-4W12) (label new cable with "3-5" label)
- One Transmitter Audio Output Cable (prepared by the site)

Hardware Setup and Installation:

1. New DECtalk card: (Detailed setup and installation procedures are in Section 4.4.4.9.2 of the *CRS Maintenance Manual*.)

   a. Setup new DECtalk card with the I/O address: 380.

b. Install new DECtalk card into slot 6 of 3FEP.

2. New ASM card: (Detailed setup procedures are in Appendix I, Section I-3.2.1.1, *ACP and ASA Equipment*. Detailed installation procedures are in Section 4.4.4.20.3 of the *CRS Maintenance Manual*.)

   a. Setup the *Silence Alarm Disable/Enable Jumper* (labeled JP1) to **Enable**.

   b. Setup both the *Channel Select Jumpers* (labeled JP2 and JP3) to **Channel 10**.

   c. Setup the *Backup Live and Playback Control Jumper* (labeled JP4) to **BUL2.**

   d. Setup the *FEP Select Jumper* (labeled JP5) to **3FEP**.

   e. Install a new ASM card into slot 10 of the ASA chassis.

3. New DECtalk-ASM Audio Cable:

   Install new cable with "3-5" label to connect the "J2" port of new DECtalk card at slot 6 of the 3FEP to the IN port of new ASM card at slot 10 of ASA chassis.

4. New Transmitter Audio Output Cable:

   Install new cable to connect the OUT1 port of new ASM card at slot 10 of ASA chassis to the Demarc panel.

**Expand from 10-Channel System to 11-Channel System**

Additional Hardware Components Required for Expansion:

- Two DECtalk cards (ASN: B440-2A2A11)
- One ASM card (ASN: B440-2A6A3)
- Two DECtalk-ASM Audio Cables (ASN: B440-4W12) (Label one with "1-4" label, and label another with "2-4" label)
- One overwrite label "4-4" for existing DECtalk-ASM Audio Cable (prepared by the site)
- One Transmitter Audio Output Cable (prepared by the site)

Hardware Setup and Installation:

1. New DECtalk cards: (Detailed setup and installation procedures are in Section 4.4.4.9.2 of the *CRS Maintenance Manual*.)

   a. Setup both new DECtalk cards with the same I/O address: 360

   b. Install one DECtalk card into slot 5 of 1FEP.

   c. Install one DECtalk card into slot 5 of 2FEP.

2. Existing DECtalk card at slot 6 of 3FEP:

   a. Disconnect the DECtalk-ASM Audio Cable from "J2" port.

b. Open the PC cover and remove the DECtalk card.

c. Change the I/O address to 360.

d. Install the DECtalk card to slot 5 of 4BKUP.

3. New ASM card: (Detailed setup procedures are in Appendix I, Section I-3.2.1.1, *ACP and ASA Equipment*. Detailed installation procedures are in Section 4.4.4.20.3 of the *CRS Maintenance Manual*.)

   a. Setup the *Silence Alarm Disable/Enable Jumper* (labeled JP1) to **Enable**.

   b. Setup both the *Channel Select Jumpers* (labeled JP2 and JP3) to **Channel 11**.

   c. Setup the *Backup Live and Playback Control Jumper* (labeled JP4) to **BUL2**.

   d. Setup the *FEP Select Jumper* (labeled JP5) to **3FEP**.

   e. Install a new ASM card into slot 11 of the ASA chassis.

4. Existing ASM card at slot 4 of ASA chassis:

   a. Disconnect the DECtalk-ASM Audio Cable with “2-1” label from the IN port.

   b. Disconnect the *Transmitter Audio Output* cable from the OUT1 port.

   c. Loosen two front panel screws and extract the ASM card from slot 4.

   d. Change the FEP Select Jumper (labeled JP5) from “2FEP” to “1FEP”.

   e. Insert the ASM card back to slot 4 and tighten two front panel screws.

   f. Connect the Transmitter Audio Output cable to the OUT1 port.

5. Existing ASM card at slot 7 of ASA chassis:

   a. Disconnect the DECtalk-ASM Audio Cable with “3-1” label from the IN port.

   b. Disconnect the Transmitter Audio Output cable from the OUT1 port.

   c. Loosen two front panel screws and extract the ASM card from slot 7.

   d. Change the FEP Select Jumper (labeled as JP5) from “3FEP” to “2FEP”.

   e. Insert the ASM card back to slot 7 and tighten two front panel screws.

   f. Connect the Transmitter Audio Output cable to the OUT1 port.

6. Existing ASM card at slot 8 of ASA chassis:

   a. Disconnect the DECtalk-ASM Audio Cable with “3-2” label from the IN port.

   b. Disconnect the Transmitter Audio Output cable from the OUT1 port.

c. Loosen two front panel screws and extract the ASM card from slot 8.

d. Change the FEP Select Jumper (labeled as JP5) from “3FEP” to “2FEP”.

e. Insert the ASM card back to slot 8 and tighten two front panel screws.

f. Connect the Transmitter Audio Output cable to the OUT1 port.

7. Operational ASC card: (Detailed setup procedures are in Appendix I, Section I-3.2.1.1, *ACP and ASA Equipment*. Detailed installation procedures are in Section 4.4.4.20.2 of the *CRS Maintenance Manual*.)

a. Disconnect four DECtalk-ASM audio cables (with labels “4-1”, “4-2”, “4-3”, “4-5”).

b. Disconnect two ACP-ASC audio cables.

c. Disconnect one ASC-4BKUP parallel port interface cables.

d. Disconnect two ACP-ASC control cables.

e. Loosen four front panel screws and extract the ASC card.

f. Setup the backup channel configuration jumper (label as “JP1”) by moving all 7 jumpers to connect left and middle columns.

g. Insert the ASC card back to the ASA and tighten the four front panel screws.

h. Reconnect two ACP-ASC control cables.

i. Reconnect one ASC-4BKUP parallel port interface cable.

j. Reconnect two ACP-ASC audio cables.

k. Reconnect four DECtalk-ASM audio cables.

8. Spare ASC card:

Setup the backup channel configuration jumper (label as “JP1”) by moving all 7 jumpers to connect left and middle columns.

9. New DECtalk-ASM Audio Cables:

a. Install new cable with “1-4” label to connect the “J2” port of new DECtalk card at slot 5 of the 1FEP to the IN port of existing ASM card at slot 4 of ASA chassis.

b. Install new cable with “2-4” label to connect the “J2” port of new DECtalk card at slot 5 of the 2FEP to the IN port of existing ASM card at slot 8 of ASA chassis.

10. Existing DECtalk-ASM Audio Cables:

a. Disconnect the DECtalk-ASM Audio Cable with “2-2” label from IN port of ASM card at slot 5 of ASA chassis.

b. Disconnect the DECtalk-ASM Audio Cable with “2-3” label from IN port of ASM card at slot 6 of ASA chassis.

c. Disconnect the DECtalk-ASM Audio Cable with “3-1” label from IN port of ASM card at slot 7 of ASA chassis.

d. Disconnect the DECtalk-ASM Audio Cable with “3-2” label from IN port of ASM card at slot 8 of ASA chassis.

e. Disconnect the DECtalk-ASM Audio Cable with “3-3” label from IN port of ASM card at slot 9 of ASA chassis.

f. Disconnect the DECtalk-ASM Audio Cable with “3-5” label from IN port of ASM card at slot 10 of ASA chassis, and place the overwrite label “4-4” over the existing “3-5” label.

g. Re-install the cable overwritten with “4-4” label to connect the “J2” port of swapped DECtalk card at slot 5 of the 4BKUP to the “BKUP Audio 4” port of the ASC card.

**NOTE:** The overwrite label is used to re-label and reuse the existing cable.

h. Re-connect the DECtalk-ASM Audio Cable with “2-1” label to IN port of ASM card at slot 5 of ASA chassis.

i. Re-connect the DECtalk-ASM Audio Cable with “2-2” label to IN port of ASM card at slot 6 of ASA chassis.

j. Re-connect the DECtalk-ASM Audio Cable with “2-3” label to IN port of ASM card at slot 7 of ASA chassis.

k. Re-connect the DECtalk-ASM Audio Cable with “3-1” label to IN port of ASM card at slot 9 of ASA chassis.

l. Re-connect the DECtalk-ASM Audio Cable with “3-2” label to IN port of ASM card at slot 10 of ASA chassis.

m. Re-connect the DECtalk-ASM Audio Cable with “3-3” label to IN port of ASM card at slot 11 of ASA chassis.

11. New Transmitter Audio Output Cable:

Install new cable to connect the OUT1 port of new ASM card at slot 11 of ASA chassis to the Demarc panel.

**Expand from 11-Channel System to 12-Channel System**

Additional Hardware Components Required for Expansion:

- One DECtalk card (ASN: B440-2A2A11)
- One ASM card (ASN: B440-2A6A3)

- One DECtalk-ASM Audio Cable (ASN: B440-4W12) (Label new cable with "3-4" label)
- One Transmitter Audio Output Cable (prepared by the site)

Hardware Setup and Installation:

1. New DECtalk card: (Detailed setup and installation procedures are in Section 4.4.4.9.2 of the *CRS Maintenance Manual*.)
   a. Setup new DECtalk card with the same I/O address: 360.
   b. Install new DECtalk card into slot 5 of 3FEP.
2. New ASM card: (Detailed setup procedures are in Appendix I, Section I-3.2.1.1, *ACP and ASA Equipment*. Detailed installation procedures are in Section 4.4.4.20.3 of the *CRS Maintenance Manual*.)
   a. Setup the *Silence Alarm Disable/Enable Jumper* (labeled JP1) to **Enable**.
   b. Setup both the *Channel Select Jumpers* (labeled JP2 and JP3) to **Channel 12**.
   c. Setup the *Backup Live and Playback Control Jumper* (labeled JP4) to **BUL2**.
   d. Setup the *FEP Select Jumper* (labeled JP5) to **3FEP.**
   e. Install a new ASM card into slot 12 of the ASA chassis.
3. New DECtalk-ASM Audio Cable:

   Install new cable with "3-4" label to connect the "J2" port of new DECtalk card at slot 5 of the 3FEP to the IN port of new ASM card at slot 12 of ASA chassis.
4. New Transmitter Audio Output Cable:

   Install new cable to connect the OUT1 port of new ASM card at slot 12 of ASA chassis to the Demarc panel.

**Expand from 12-Channel System to 13-Channel System**

Additional Hardware Components Required for Expansion:

- One DECtalk card (ASN: B440-2A2A11)
- One ASM card (ASN: B440-2A6A3)
- One DECtalk-ASM Audio Cable (ASN: B440-4W12) (Label new cable with "3-5" label)
- One Transmitter Audio Output Cable (prepared by the site)

Hardware Setup and Installation:

1. New DECtalk card: (Detailed setup and installation procedures are in Section 4.4.4.9.2 of the *CRS Maintenance Manual*.)
   a. Setup new DECtalk card with the same I/O address: 380
   b. Install new DECtalk card into slot 6 of 3FEP.
2. New ASM card: (Detailed setup procedures are in Appendix I, Section I-3.2.1.1, *ACP and ASA Equipment*. Detailed installation procedures are in Section 4.4.4.20.3 of the *CRS Maintenance Manual*.)
   a. Setup the *Silence Alarm Disable/Enable Jumper* (labeled JP1) to **Enable**.
   b. Setup both the *Channel Select Jumpers* (labeled JP2 and JP3) to **Channel 13**.
   c. Setup the *Backup Live and Playback Control Jumper* (labeled JP4) to **BUL2**.
   d. Setup the *FEP Select Jumper* (labeled JP5) to **3FEP**.
   e. Install a new ASM card into slot 13 of the ASA chassis.
3. New DECtalk-ASM Audio Cable:

   Install new cable with "3-5" label to connect the "J2" port of new DECtalk card at slot 6 of the 3FEP to the IN port of new ASM card at slot 13 of ASA chassis.

4. New Transmitter Audio Output Cable:

   Install new cable to connect the OUT1 port of new ASM card at slot 13 of ASA chassis to the Demarc panel.

### E-2.2 Case 2: Expansion with an additional FEP

#### E-2.2.1 Expand from Typical 4-Channel System to Large 5-Channel System

Additional Hardware Components Required for Expansion:

- One 2FEP computer (ASN: B440-2A2)
- One LAN cable segment (ASN: B440-2W1)
- One BNC tee connector (ASN: B440-4J1)
- One FEP switch VGA video cable (ASN: B440-2W3)
- One FEP switch PS/2 keyboard cable (ASN: B440-2W4)
- One DECtalk card (ASN: B440-2A2A11)
- Two ASM cards (ASN: B440-2A6A3)
- One DECtalk-ASM audio cable (ASN: B440-4W12) (label new cable with "2-2" label)
- Two overwrite labels (marked 2-1 and 2-5) for existing DECtalk-ASM cables (prepared by the site)
- One transmitter audio output cable (prepared by the site)
- One NWRSAME (prepared by the site)
- One NWRSAME-ACP interface cable (ASN: B440-1A5W4)

Hardware Setup and Installation:

1. New DECtalk card: (Detailed setup and installation procedures are shown in Section 4.4.4.9.2 of the *CRS Maintenance Manual.)*
   a. Setup new DECtalk card with the same I/O address: 250
   b. Install new DECtalk card into slot 3 of 2FEP.
2. Existing DECtalk card at slot 5 of 1FEP:
   a. Disconnect the DECtalk-ASM Audio Cable from "J2" port.
   b. Open the PC cover and Remove the DECtalk card.
   c. Change the I/O address to 240.
   d. Install the DECtalk card to slot 2 of 2FEP.
3. Existing DECtalk card at slot 5 of 4BKUP:
   a. Disconnect the DECtalk-ASM Audio Cable from "J2" port.
   b. Open the PC cover and Remove the DECtalk card.
   c. Change the I/O address to 380.
   d. Install the DECtalk card to slot 6 of 2FEP.
4. New 2FEP Computer: (The new PC is pre-configured and ready for LAN connection. Detailed installation procedures are in Section 4.4.4.2.2 of the *CRS Maintenance Manual*.)
   a. Install 2FEP.

b. Install new FEP switch VGA video cable.

c. Install new FEP switch PS/2 keyboard cable.

d. Install new LAN cable segment and BNC tee connector to connect the 2FEP PC into the existing CRS LAN.

5. New ASM card #1: (Detailed setup procedures are in Appendix I, Section I-3.2.1.1, *ACP and ASA Equipment*. Detailed installation procedures are in Section 4.4.4.20.3 of the *CRS Maintenance Manual*.)

   a. Setup the *Silence Alarm Disable/Enable Jumper* (labeled JP1) to **Enable**.

   b. Setup both the *Channel Select Jumpers* (labeled JP2 and JP3) to **Channel 5**.

   c. Setup the *Backup Live and Playback Control Jumper* (labeled JP4) to **BUL2.**

   d. Setup the *FEP Select Jumper* (labeled JP5) to **2FEP**.

   e. Install a new ASM card into slot 5 of the ASA chassis.

6. New ASM card #2:

   a. Setup the *Silence Alarm Disable/Enable Jumper* (labeled JP1) to **Enable**.

   b. Setup both the *Channel Select Jumpers* (labeled JP2 and JP3) to **PB2**.

   c. Setup the *Backup Live and Playback Control Jumper* (labeled JP4) to **BUL2**.

   d. Setup the *FEP Select Jumper* (labeled JP5) to **2FEP**.

   e. Install a new ASM card into slot PB2 of the ASA chassis.

7. Existing ASM card at slot 4 of ASA chassis:

   a. Disconnect the DECtalk-ASM audio cable with “1-4” label from the IN port.

   b. Disconnect the transmitter audio output cable from the OUT1 port.

   c. Loosen two front panel screws and extract the ASM card from slot 4.

   d. Change the FEP select jumper (labeled as JP5) from “1FEP” to “2FEP”.

   e. Insert the ASM card back to slot 4 and tighten two front panel screws.

   f. Re-connect the transmitter audio output cable to the OUT1 port.

   g. Re-connect the DECtalk-ASC audio cable with “1-4” label to the IN port.

8. Operational ASC card: (Detailed setup procedures are in Appendix I, Section I-3.2.1.1, *ACP and ASA Equipment*. Detailed installation procedures are in Section 4.4.4.20.2 of the *CRS Maintenance Manual*.)

    a. Disconnect five DECtalk-ASM audio cables (labeled “4-1”, “4-2”, “4-3”, “4-4”, and “4-5”).

    b. Disconnect two ACP-ASC audio cables.

    c. Disconnect one ASC-4BKUP parallel port interface cables.

    d. Disconnect two ACP-ASC control cables.

    e. Loosen four front panel screws and extract the ASC card.

    f. Setup the backup channel configuration jumper (labeled “JP1”) by moving all 7 jumpers to connect middle and right columns.

    g. Insert the ASC card back to the ASA and tighten the four front panel screws.

    h. Re-connect two ACP-ASC control cables.

    i. Re-connect one ASC-4BKUP parallel port interface cable.

    j. Re-connect two ACP-ASC audio cables.

    k. Re-connect five DECtalk-ASM audio cables.

9. Spare ASC card:

    Setup the backup channel configuration jumper (label as “JP1”) by moving all 7 jumpers to connect middle and right columns.

10. New DECtalk-ASM Audio Cable:

    Install new cable with “2-2” label to connect the “J2” port of new DECtalk card at slot 3 of the 2FEP to the IN port of new ASM card at slot 5 of ASA chassis.

11. Existing DECtalk-ASM Audio Cable:

    a. Disconnect the DECtalk-ASM Audio Cable with “1-4” label from the IN port of ASM card at slot 4 of ASA chassis.

    b. Place the overwrite label “2-1” over the “1-4” label on the DECtalk-ASM audio cable.

    c. Re-install the DECtalk-ASM audio cable with overwrite “2-1” label to connect the “J2” port of swapped DECtalk card at slot 2 of the 2FEP to the IN port of ASM card at slot 4 of ASA chassis.

**NOTE:** The overwrite label is used to re-label and re-use the existing cable.

12. Existing DECtalk-ASM Audio Cable:

    a. Disconnect the DECtalk-ASM Audio Cable with “4-4” label from the ASC front panel.

    b. Place the overwrite label “2-5” over the “4-4” label on the DECtalk-ASM audio cable.

    c. Re-install the DECtalk-ASM audio cable with overwrite “2-5” label to connect the “J2” port of swapped DECtalk card at slot 6 of the 2FEP to the IN port of ASM card at slot PB2 of ASA chassis.

**NOTE:** The overwrite label is used to re-label and to re-use the existing cable.

13. New Transmitter Audio Output Cable:

    Install new cable to connect the OUT1 port of new ASM card at slot 5 of ASA chassis to the Demarc panel.

14. New NWRSAME and NWRSAME-ACP Interface Cable (a detailed wiring diagram is shown in Figure I-10 of Appendix I, *ACP and ASA Equipment*).

    a. Install new NWRSAME to the top panel of 5MP workstation.

    b. Install the NWRSAME-ACP interface cable to connect pins 2, 6, 7, 9, and 10 of NWRSAME rear connector to the “NWRSAME INPUT socket 1” port of ACP2 rear panel.

### E-2.2.2 Expand from Large 8-Channel System to Maximum 9-Channel System

Additional Hardware Components Required for Expansion:

- One 3FEP computer (ASN: B440-2A2)
- One LAN cable segment (ASN: B440-2W1)
- One BNC tee connector (ASN: B440-4J1)
- One FEP switch VGA video cable (ASN: B440-2W3)
- One FEP switch PS/2 keyboard cable (ASN: B440-2W4)
- One ASM card (ASN: B440-2A6A3)
- Three overwrite labels (marked as “3-1”, “3-2”, and “3-3”) for existing DECtalk-ASM Cables (prepared by the site)
- One transmitter audio output cable (prepared by the site)

Hardware Setup and Installation:

1. Existing DECtalk card at slot 5 of 1FEP: (Detailed setup and installation procedures are in Section 4.4.4.9.2 of the *CRS Maintenance Manual*.)

    a. Disconnect the DECtalk-ASM audio cable from “J2” port.

    b. Open the PC cover and remove the DECtalk card.

c. Change the I/O address to 240.

d. Install the DECtalk card to slot 2 of 3FEP.

2. Existing DECtalk card at slot 5 of 2FEP: (Detailed setup and installation procedures are in Section 4.4.4.9.2 of the *CRS Maintenance Manual*.)

   a. Disconnect the DECtalk-ASM audio cable from “J2” port.

   b. Open the PC cover and remove the DECtalk card.

   c. Change the I/O address to 250.

   d. Install the DECtalk card to slot 3 of 3FEP.

3. Existing DECtalk card at slot 5 of 4BKUP:

   a. Disconnect the DECtalk-ASM audio cable from “J2” port.

   b. Open the PC cover and remove the DECtalk card.

   c. Change the I/O address to 328.

   d. Install the DECtalk card to slot 4 of 3FEP.

4. New 3FEP Computer: (The new PC is pre-configured and ready for LAN connection. Detailed installation procedures are in Section 4.4.4.2.2 of the *CRS Maintenance Manual*.)

   a. Install 3FEP.

   b. Install new FEP switch VGA video cable.

   c. Install new FEP switch PS/2 keyboard cable.

   d. Install new LAN cable segment and BNC tee connector to connect the 3FEP.

   e. Install new LAN cable segment and BNC tee connector to connect the 3FEP PC into the existing CRS LAN.

5. New ASM card: (Detailed setup procedures are in Appendix I, Section I-3.2.1.1, *ACP and ASA Equipment*. Detailed installation procedures are in Section 4.4.4.20.3 of the *CRS Maintenance Manual*.)

   a. Setup the *Silence Alarm Disable/Enable Jumper* (labeled JP1) to **Enable**.

   b. Setup both the *Channel Select Jumpers* (labeled JP2 and JP3) to **Channel 9**.

   c. Setup the *Backup Live and Playback Control Jumper* (labeled JP4) to **BUL2**.

   d. Setup the *FEP Select Jumper* (labeled JP5) to **3FEP**.

   e. Install a new ASM card into slot 9 of the ASA chassis.

6. Existing ASM card at slot 4 of ASA chassis:
    a. Disconnect the DECtalk-ASM Audio Cable with “1-4” label from the IN port.
    b. Disconnect the Transmitter Audio Output cable from the OUT1 port.
    c. Loosen two front panel screws and extract the ASM card from slot 4.
    d. Change the FEP Select Jumper (labeled as JP5) from “1FEP” to “2FEP”.
    e. Insert the ASM card back to slot 4 and tighten two front panel screws.
    f. Re-connect the Transmitter Audio Output cable to the OUT1 port.
    g. Re-connect the DECtalk-ASC audio cable with “1-4” label to the IN port.
7. Existing ASM card at slot 7 of ASA chassis:
    a. Disconnect the DECtalk-ASM Audio Cable with “2-3” label from the IN port.
    b. Disconnect the Transmitter Audio Output cable from the OUT1 port.
    c. Loosen two front panel screws and extract the ASM card from slot 4.
    d. Change the FEP Select Jumper (labeled as JP5) from “2FEP” to “3FEP”.
    e. Insert the ASM card back to slot 7 and tighten two front panel screws.
    f. Re-connect the Transmitter Audio Output cable to the OUT1 port.
    g. Re-connect the DECtalk-ASC audio cable with “2-3” label to the IN port.
8. Existing ASM card at slot 8 of ASA chassis:
    a. Disconnect the DECtalk-ASM Audio Cable with “2-4” label from the IN port.
    b. Disconnect the Transmitter Audio Output cable from the OUT1 port.
    c. Loosen two front panel screws and extract the ASM card from slot 4.
    d. Change the FEP Select Jumper (labeled as JP5) from 2FEP to 3FEP.
    e. Insert the ASM card back to slot 8 and tighten two front panel screws.
    f. Re-connect the Transmitter Audio Output cable to the OUT1 port.
    g. Re-connect the DECtalk-ASM audio cable with “2-4” label to the IN port.
9. Operational ASC card: (Detailed setup procedures are in Appendix I, Section I-3.2.1.1, *ACP and ASA Equipment*. Detailed installation procedures are in Section 4.4.4.20.2 of the *CRS Maintenance Manual*.)
    a. Disconnect five DECtalk-ASM audio cables (labeled “4-1”, “4-2”, “4-3”, “4-4”, and “4-5”).
    b. Disconnect two ACP-ASC audio cables.

c. Disconnect one ASC-4BKUP parallel port interface cables.

d. Disconnect two ACP-ASC control cables.

e. Loosen four front panel screws and extract the ASC card.

f. Setup the backup channel configuration jumper (label as “JP1”) by moving all 7 jumpers to connect middle and right columns.

g. Insert the ASC card back to the ASA and tighten the four front panel screws.

h. Re-connect two ACP-ASC control cables.

i. Re-connect one ASC-4BKUP parallel port interface cable.

j. Re-connect two ACP-ASC audio cables.

k. Re-connect five DECtalk-ASC audio cables.

10. Spare ASC card:

    Setup the backup channel configuration jumper (label as “JP1”) by moving all 7 jumpers to connect middle and right columns.

11. Existing DECtalk-ASM Audio Cables:

    a. Disconnect the DECtalk-ASM audio cable with “2-1” label from IN port of ASM card at slot 5 of ASA chassis.

    b. Disconnect the DECtalk-ASM audio cable with “2-2” label from IN port of ASM card at slot 6 of ASA chassis.

    c. Disconnect the DECtalk-ASM audio cable with “2-3” label from IN port of ASM card at slot 7 of ASA chassis.

12. Existing DECtalk-ASM Audio Cable:

    a. Disconnect the DECtalk-ASM audio cable with “1-4” label from the IN port of ASM card at slot 4 of ASA chassis.

    b. Place the overwrite label “3-1” over the “1-4” label on the DECtalk-ASM audio cable.

    c. Re-install the DECtalk-ASM audio cable with overwrite “3-1” label to connect the “J2” port of swapped DECtalk card at slot 2 of the 3FEP to the IN port of ASM card at slot 7 of ASA chassis.

**NOTE:** The overwrite label is used to re-label and to re-use the existing cable.

13. Existing DECtalk-ASM Audio Cable:

    a. Disconnect the DECtalk-ASM audio cable with “2-4” label from the IN port of ASM card at slot 4 of ASA chassis.

b. Place the overwrite label “3-2” over the “2-4” label on the DECtalk-ASM audio cable.

c. Re-install the DECtalk-ASM audio cable with overwrite “3-2” label to connect the “J2” port of swapped DECtalk card at slot 3 of the 3FEP to the IN port of ASM card at slot 8 of ASA chassis.

**NOTE:** The overwrite label is used to re-label and to re-use the existing cable.

14. Existing DECtalk-ASM Audio Cable:

a. Disconnect the DECtalk-ASM audio cable with “4-4” label from the ASC front panel.

b. Place the overwrite label “3-3” over the “4-4” label on the DECtalk-ASM audio cable.

c. Re-install the DECtalk-ASM audio cable with overwrite “3-3” label to connect the “J2” port of swapped DECtalk card at slot 4 of the 3FEP to the IN port of new ASM card at slot 9 of ASA chassis.

**NOTE:** The overwrite label is used to re-label and to re-use the existing cable.

d. Re-connect the DECtalk-ASM audio cable with “2-1” label to IN port of ASM card at slot 4 of ASA chassis.

e. Re-connect the DECtalk-ASM audio cable with “2-2” label to IN port of ASM card at slot 5 of ASA chassis.

f. Re-connect the DECtalk-ASM audio cable with “2-3” label to IN port of ASM card at slot 6 of ASA chassis.

15. New Transmitter Audio Output Cable:

Install new cable to connect the OUT1 port of new ASM card at slot 9 of ASA chassis to the Demarc panel.